PETITION OF C-TEC SOLAR, LLC

FOR A DECLARATORY RULING

Construction of a 3.75 Megawatt Solar Photovoltaic

Customer-Side Distributed Resource Electric Generating Project

Located at 1 Ballard Road, Thompson, Connecticut

July 19, 2016

Submitted By:

Brad N. Mondschein
Pullman & Comley LLC
90 State House Square
Hartford, Connecticut 06103
(860) 424-4319
(860) 424-4370 (fax)
bmondschein@pullcom.com
Attorneys for C-TEC Solar, LLC

I. INTRODUCTION

A. Purpose and Statutory Authority

Pursuant to Connecticut General Statutes ("Conn. Gen. Stat.") §§16-50k(a) and 4-176(a) and Regulations of Connecticut State Agencies ("RCSA") §16-50j-38 *et seq.*, C-TEC Solar, LLC ("C-TEC") requests that the Connecticut Siting Council ("Siting Council") approve by declaratory ruling C-TEC's proposed location, construction, and operation of an approximately 3.75 megawatt ("MW") solar photovoltaic ("PV") system, along with its associated ground equipment, access road, ancillary buildings and electric connections (together the "Project") at 1 Ballard Road, Thompson, Connecticut (the "Property").

The Project is an Agricultural Virtual Net Metering Project as defined in Conn. Gen. Stat. §16-244u. As such, the Project is a "customer-side distributed resource facility" as defined in Conn. Gen. Stat. §16-1(a)(34) and will produce credits for municipal "beneficial accounts", as that term is defined in Conn. Gen. Stat. § 16-244u.

Conn. Gen. Stat. §16-50k(a) provides, in relevant part, "(a) . . . Notwithstanding the provisions of this chapter or title 16a, the council shall, in the exercise of its jurisdiction over the siting of generating facilities, approve by declaratory ruling . . . (B) the construction or location of . . . any customer-side distributed resources project or facility. . . with a capacity of not more than sixty-five megawatts, as long as such project meets air and water quality standards of the Department of Energy and Environmental Protection."

Pursuant to Conn. Gen. Stat. §16-50k(a), the Siting Council should approve the Project by declaratory ruling since it is a customer-side distributed resource facility, under 65 MW, and complies with the air and water quality standards of the Department of Energy and

Environmental Protection ("DEEP"). Additionally, the Project will not have a substantial adverse environmental impact.

The Project also furthers the State's energy policies to "develop and utilize renewable energy resources, such as solar and wind energy, to the maximum extent possible." Conn. Gen. Stat. §16a-35k(3). As an Agricultural Virtual Net Metering Project, the Project also promotes the State's goal to accommodate optimal land utilization for renewable energy facilities. See Docket No. 13-08-14, *PURA Development of the Administrative Processes and Program Specifications for Virtual Net Metering*, Decision at 12, July 21, 2014.

B. Legal Name and Address of Petitioner and Contact Information

Applicant: C-TEC Solar, LLC, 1 Griffin Road South, Bloomfield, CT 06002 (Connecticut LLC)

Attorney/Representative: Brad N. Mondschein, Pullman & Comley LLC, 90 State House Square, Hartford, CT 06103, 860-424-4319, bmondschein@pullcom.com

C. Project Overview

C-TEC is a Connecticut company that provides quality development of commercial and residential solar projects throughout Connecticut and other locations in the United States. The State of Connecticut has recognized the benefits of local renewable energy development and implemented renewable portfolio standards ("RPS") to encourage the development of renewable energy resources not only to lessen the country's dependence on foreign oil but also to reduce the environmental impacts associated with fossil fuel sources. In addition, many of the State's cities and towns have pledged to increase their consumption of energy from renewable sources. Virtual net metering (Conn. Gen. Stat. §16-244u) allows for (1) the optimal use of the State's agricultural areas to produce clean renewable energy and (2) municipalities to consume renewable energy through a virtual net metering program.

The Project is the one of the first Agricultural Virtual Net Metering Facilities to be approved under Conn. Gen. Stat. §16-244u. The Project will consist of a 3.75 MW solar array that will be ground mounted. The Project will also consist of necessary inverters and transformers to support the system and the interconnection of the system to the electrical grid. C-TEC will also be constructing a storage shed on the Property to support the ongoing agricultural activities of the remaining portion of the Property. The storage shed will consume a portion of the Project's electrical output while the remaining electrical output will be delivered to the electrical grid and produce virtual net metering credits which will be sold to other municipalities in the state.

The Project will produce clean, renewable electricity with zero emissions and no water consumption and will result in significant environmental benefits.

C-TEC engaged All-Points Technology Corporation ("APT") to conduct an Environmental Assessment of the Project. A copy of the Environmental Assessment is attached hereto as **Exhibit A**. ("Environmental Assessment")

D. Project Ownership and Contemplated Transfer

The Project is being developed by C-TEC. Upon completion of the Project, the Project ownership will be transferred to an entity to be formed by the Connecticut Green Bank. The structure of the ownership by the Connecticut Green Bank has been approved by PURA under the Virtual Net Metering Program. See Docket No. 15-09-08, *Petition of the Connecticut Green Bank For A Declaratory Ruling Regarding Virtual Net Metering Eligibility*, Decision, February 3, 2016. C-TEC is disclosing that the transfer is contemplated and that the approval issued pursuant to this proceeding will be transferred to the Connecticut Green Bank entity, to be formed. This notice is being provided pursuant to Conn. Gen. Stat. §16-50k(b).

E. Key Project Elements

The Project consists primarily of the construction and installation of over 11,200 photovoltaic modules, 100 inverters, 3 transformers and electrical interconnection of the same.

1. Property

The Property is located at 1 Ballard Road in Thompson, Connecticut. The Property consists of approximately 50 acres in total with the entire Project covering approximately 14 acres and the solar panels anticipated to cover approximately 10.75 acres. The Property is in an Industrial, IND, Zone. The Property has been used for agricultural activity and mining operations, most recently the growing and harvesting of hay. The Property is adjacent to the Little Mountain Brook, Route 12 and Route 93 (to the North), Quinnatisset Brook (to the South), the Airline Trail State Park (to the West) and I-395 (to the East). See Environmental Assessment, p.2, Figure 1.

2. Equipment and Electrical Interconnection

The current anticipated configuration of Project equipment is listed in the Environmental Assessment. As Project development continues, the final types of equipment may vary from the current configuration, but will be substantially similar. Electrical connections will extend overhead and is proposed to be interconnected to Eversource Energy ("Eversource") at an existing distribution feeder on the existing distribution system on Thompson Road (Rte. 193) in accordance with Eversource technical standards and State of Connecticut, ISO- New England ("ISO-NE"), and the Federal Energy Regulatory Commission ("FERC") requirements. The interconnection will be made pursuant to Eversource's Guidelines for Generator Interconnection.

F. Community Relations

Throughout the development of the Property, C-TEC has apprised local officials of its intent regarding the Project. C-TEC is committed to working with the Town of Thompson to ensure

that the Town as well as C-TEC, realizes the benefits of the project. C-TEC has developed a good relationship with the Thompson, including:

- Regular discussions with local officials, including the Town of Thompson's First Selectman; and
- Providing the Town of Thompson with a copy of this petition;
- In addition, although the Project is not required to obtain local zoning approval(s), it is anticipated that the Project will be consistent with applicable local regulations including the Town of Thompson's zoning regulations, wetlands regulations and plan of conservation and development.

III. DESCRIPTION OF PROPOSED PROJECT

A. Property Description and Property Selection

The Property is located at 1 Ballard Road, Thompson, Connecticut which consists of approximately 50 acres. The Property is located in the Industrial zone. Currently, the Property is undeveloped land that is used for agricultural use, mostly hay. The Property is adjacent to the Little Mountain Brook, Route 12 and Route 193 (to the North), Quinnatisset Brook (to the South), the Airline Trail State Park (to the West) and I-395 (to the East).

The Property was selected based on a number of factors including; 1) a sufficient size to accommodate the solar PV panels needed for the Project; 2) agricultural characteristics; 3) appropriate topography to allow the development of the Project with minimal grading; and 4) proximity to electrical infrastructure and roadways.

Developing the Project on the Property will allow the Town of Thompson to realize increased tax revenue on a piece of property that is currently classified as open

space/agricultural. As such, the development of the Project will result in immediate benefits to the Town of Thompson without burdening Town resources.

B. Project Description

The Project consists of the installation of 11,200 photovoltaic modules, associated ground equipment, an ancillary building, an access road, and an electrical interconnection. It is anticipated that the Project will have an anticipated useful life of 25 years. It should be noted that the Project location is remote as it relates to roads and neighbors and is surrounded by natural barriers, such that its requirements for new fencing and a new gate are only along the entrance to Thompson Road. An existing gated access off of Ballard Road will have similar, adjoining fencing to discourage unauthorized entry to the Property. The Project will have minimal visual impact from the road. The Project operates silently and exclusively uses sunlight as fuel.

1. The Equipment

The current configuration of Project equipment is listed in the Environmental Assessment. As Project development continues, the final types of equipment may vary from the current configuration, but will be substantially similar.

2. Access Road

The Property will be accessed from Thompson Road (Rte. 193). C-TEC will utilize an existing gravel and sand driveway for access during construction and operation of the Project. In addition, the existing gated fence along Thompson Road will be improved.

3. Ground Equipment

An electrical collector will be constructed on the Property. At the point of common coupling with Eversource, C-TEC will provide a utility-class circuit breaker, equipped with a multifunctional relay, to serve as the Interconnection Interruption Device. State-of-the-art anti-

islanding features integral to the UL-tested inverters prevent the need for a recloser. Revenue metering will be provided and a gang-operated disconnect switch will be provided. Additional equipment to monitor circuit voltage and to disconnect the Project from the grid will also be installed as needed on existing grid circuits to protect the Project during power outages. All interconnection equipment and procedures will be selected and installed according to those tests performed by Eversource, the interconnecting utility.

4. Interconnection

Interconnection will be made to Eversource's distribution system at Thompson Road in accordance with all applicable Eversource technical standards and State of Connecticut, ISO-NE and FERC requirements. The interconnection will be made pursuant to Eversource's Guidelines for Generator Interconnection.

C. Service Life and Capacity Factor

The solar panels and inverters have an anticipated service life of 25 years. According to the 2014 Integrated Resources Plan for Connecticut, solar PV has an expected capacity factor of approximately thirteen (13) percent.

IV. PROJECT BENEFITS

Pursuant to Conn. Gen. Stat. § 16-50p(c)(3), a project provides a public benefit if a project "is necessary for the reliability of the electric power supply of the state or for a competitive market for electricity." The Project will generate the bulk of its power during the summer electrical peak, thereby providing peaking resources when the state has its greatest need. Moreover, the Project will help foster the state's goal of developing "renewable energy resources, such as solar and wind energy, to the maximum practicable extent" pursuant to Conn. Gen. Stat. § 16a-35k(3).

The Project will provide substantial additional benefits to the State of Connecticut and the Town of Thompson, including:

- Generation of 100 percent renewable energy;
- Energy generation without any air emissions, including greenhouse gas emissions;
- Energy generation without any water consumption or pollution;
- Potential displacement of older fossil fuel generation;
- Increased distribution of generation resources in the state;
- Decreased reliance on the importation of fossil fuels;
- A reliable source of energy that diversifies the State's generation portfolio mix and contributes Class I renewable energy to meet the State's renewable portfolio standards;
- Numerous economic benefits to the Town and the area, including significant tax revenue to the Town of Thompson;
- Creation of jobs; and
- Significant environmental benefits with minimal impact to the land.

In summary, the Project is an exciting, state-of-the-art project that offers significant economic, environmental, and societal benefits to the citizens of the Town of Thompson and the State of Connecticut. The Project will generate 100 percent clean, green, renewable energy adding much needed solar-generated electricity to Connecticut's fuel mix and increased access to renewable electricity in the region.

V. POTENTIAL ENVIRONMENTAL EFFECTS

C-TEC and its consultant, APT, conducted a comprehensive environmental assessment of the Project. See **Exhibit A**. The Project has been designed to minimize environmental impacts. C-TEC worked carefully through numerous iterations of potential locations and spacing to

balance capturing optimum solar conditions while avoiding or minimizing effects to the existing environment and habitat. In fact, the Project will have minimal adverse environmental impacts on scenic, historic or recreational values, as mandated by Conn. Gen. Stat. § 16-50g and as discussed in more detail below.

A. Proposed Project Development

The Project will be developed in the central portion of the Property, which is primarily cleared land that was used for material mining and agriculture. See Environmental Assessment, Figure 5, p. 21. Surrounding the Project Area is forested land with a mix of coniferous and deciduous species ranging from 6 to 28 inches in diameter. Trees within approximately 0.84-acre of Upland Forest in the southern portion of the Project Area would be selectively removed to prevent shading of the Project. New soil disturbances will be minimized to facilitate the installation of the solar arrays and associated equipment. The Project Area includes relatively level grades such that the development can be generally accomplished without significant cuts and/or fills.

Based on the Property's relative remoteness and natural/man-made barriers, no fencing is planned for the Project. Two (2) existing entrances to the Property, one each from the north and southeast, would be gated and bordered by chain-link fencing to limit unauthorized access. A 20-foot by 20-foot storage barn will be constructed near the northeast corner of the Project for the property owner to store agricultural equipment.

To facilitate the development of the Property, a total of approximately 14 acres require some level of disturbance. Electrical connections would extend overhead and connect to public utilities located on Thompson Road (Rte. 193). Once construction is complete, disturbed areas will be seeded for the establishment of permanent cover (turf).

B. Public Health and Safety

The Project represents a clean and safe method of electricity generation in a manner consistent with state and federal policy to protect public health and safety. In terms of public health, the Project will generate electricity in a cleaner and more environmentally acceptable manner compared to conventional generation using nuclear, natural gas, coal, or oil as fuel. Because the Project will not burn fuel such as natural gas, coal, or oil, there will not be any need to consider release and ignition of combustible fuels at pipelines, compressors, or storage facilities. The absence of combustible fuels for Project operation completely eliminates the risk of environmental damage due to fuel spillage or explosion due to inadvertent ignition of natural gas or other fossil fuels. Further, because the Project has neither moving parts nor combustion activities, there is not anticipated to be noise impacts emanating from the Project. Overall, the Project will meet or exceed all health and safety requirements applicable for electric power generation.

The Project would be designed to applicable industry, State, and local codes and standards and would not pose a safety concern or create undue hazard to the general public. The Project would not consume any raw materials, would not produce any by-products and would be unstaffed during normal operating conditions. The Project would not be fenced but the Property's two (2) entrances would be gated, limiting access to authorized personnel only.

Each employee working on the Property will:

- Receive required general and Property specific health and safety training;
- Comply with all health and safety controls as directed by local and state requirements;
- Understand and employ the Property health and safety plan while on the Property;

- Know the location of local emergency care facilities, travel times, ingress and egress routes; and
- Report all unsafe conditions to the construction manager.

Construction equipment will be required to access the Property during normal working hours. After construction is complete and the Project (unstaffed) is operable, traffic at the Property will be minimal. Two times per year the site will be mowed. Maintenance of the electrical equipment will occur once per year. Any equipment that breaks down will be repaired on an as-needed basis. Annual maintenance will typically be two technicians for one day. The solar modules are designed to absorb incoming solar radiation and minimize reflectivity, such that only a small percentage of incidental light will be reflected off the panels. This incidental light is significantly less reflective than common building materials, such as steel, or the surface of smooth water. The panels will be tilted up toward the southern sky at a fixed angle of 25 degrees, further reducing reflectivity.

C. Wetlands and Watercourses

The Project has been designed so that there will be no direct impacts on wetlands and watercourses. There are three wetland areas and two riparian corridors associated with the Property. See Environmental Assessment, p.6, Figure 2 and p.8, Figure 3.

Wetland 1 consists of a riparian corridor associated with a perennial stream identified as Little Mountain Brook. The dominant vegetation class of this wetland system is forested with interior areas of emergent habitats. Eastern and western extents of the system consist of a well-defined perennial stream with incised banks and narrow bordering wetlands. Central portions of the wetland consist of broad emergent wetland areas with diffuse braided stream complexes. The northeast corner of Wetland 1 consists of emergent/wet meadow habitat dominated by reeds,

grasses, and ferns. Scrub/shrub habitats provide transitional ecotones to the forested interior of Wetland 1. In the far southwest corner of Wetland 1 a backwater depression disconnected from the Little Mountain Brook was observed to support vernal pool breeding habitat (discussed further below). An approximately 20-foot-wide existing gravel access road crosses Wetland 1 in its eastern extents conveying flows via twin 48" diameter reinforced concrete pipe culverts. Generally, northern edges of this wetland system consist of broad transitional wetland areas while southern edges consist of steeply sloping banks. This wetland drains west and eventually converges with Quinnatisset Brook (Wetland 2) before ultimately draining into the Quinebaug River. Soils are dominated by a complex of glaciofluvial material and alluvial deposits. Western extents of this stream system have experienced substantial flooding resulting in large open backwater areas as a function of downstream beaver activity.

Wetland 2 consists of a riparian corridor associated with a perennial stream identified as Quinnatisset Brook. The dominant vegetation class of this wetland system is forested with some edge scrub/shrub habitat. The entirety of the system consists of a well-defined perennial stream with incised banks and narrow bordering wetlands. In particular, the northern edge of this wetland consists of steeply sloping forested areas. Similar to conditions observed in Wetland 1, western extents of this stream system have experienced substantial flooding resulting in large open backwater areas as a function of downstream beaver activity. This wetland drains west and eventually converges with Little Mountain Brook (Wetland 1) before draining into the Quinebaug River. Soils are dominated by a complex of glaciofluvial material and alluvial deposits.

No wetlands or watercourses will be directly impacted by the Project. The existing access road, which currently crosses Wetland 1 via culvert, will require minimal upgrading. All clearing

and grading limits for the Project's infrastructure (solar arrays and associated equipment) would maintain a setback of approximately 45 feet to the south of Wetland 1.

All the Project-related activities located proximate to Wetland 2 consist of mature tree and understory removal on a side-slope that provides cover to the riparian corridor. The Project was redesigned to minimize clearing requirements in this area. In addition, a tree clearing mitigation plan is proposed that will minimize soil disturbances to the extent feasible, protect the remaining vegetation, and reestablish understory vegetation in cleared areas. The closest tree clearing to Wetland 2 will occur approximately 20 feet to the north of this resource.

C-TEC is planning to mitigate the effects of the tree removal near Wetland 2. Tree removal within mature forested upland areas is proposed to minimize shading of the Project. Work will be conducted within approximately 0.84 acre of mature upland forest. All of the trees selected for removal are located along the southern edges of the Project Area adjacent to Wetland 2. Due to the presence of moderate to steep slopes in the area proposed for clearing, and the co-occurrence of Quinnatisset Brook, the following measures will be implemented during the clearing work within the upland forested areas. Firstly, to promote slope stabilization during and after construction, techniques will be employed that minimize disturbance in these areas. Harvesting methods will be used that will limit equipment and vehicular traffic on slopes through the use of machinery that reaches from the top of slope where feasible. In addition, when access onto slopes is deemed necessary, efforts will be made to protect (to the greatest extent feasible) all existing vegetation in the understory not to be removed. All soils destabilized during clearing will be immediately stabilized with a combination of erosion controls blankets (composed of naturally woven/non-synthetic materials), hydro-seeding, or suitable alternatives. All cleared

areas will be under sown with an approved conservation seed mix composed of native seed stock suitable for the Property conditions.

C-TEC notes that these types of wetland conditions and Project-related impacts are well within the Siting Council's acceptable parameters. The Siting Council has approved solar PV projects with similar wetland conditions. For example:

- Petition No. 1150, a 3.1 MW project on 15.8 acres, with clearing within 15 feet of wetlands and an intermittent water channel. (Siting Council approval on May 28, 2015).
- Petition No. 1178, a 30 MW project on 144 acres, with clearing within 9 feet of wetlands. (Siting Council approval on September 17, 2015).
- Petition No. 1195, a 4.05 MW project on 19.1 acres, with construction activity within 25 feet of wetlands. (Siting Council approval on January 7, 2016).

D. Vernal Pools

APT conducted a vernal pool survey on April 6, 2016. Survey methods included visual observations, chorus surveys and cover searching. One (1) vernal pool (Vernal Pool 1) was identified interior to Wetland 1 and classified as a "classic" style habitat. Areas within 750 feet of Vernal Pool 1 were inspected for the potential of supporting vernal pool breeding habitat. See Environmental Assessment, p.25, Figure 6.

Two (2) vernal pool indicator amphibian species were confirmed breeding on the Property: the wood frog (Lithobates sylvaticus) and spotted salamander (Ambystoma maculatum).

Vernal Pool 1 is a depressional pool located in the western extent of the Property. This pool is located adjacent to the northwest corner of the Project Area within the forested edge of

the open field. As a result, a majority of the intact supporting upland habitat is located away from the Project Area to the north, east, and west. Seasonally, this depression receives flood waters that overflow from the banks of Little Mountain Brook.

Tables 1 and 2 summarize the amphibians, reptiles and egg masses observed on the Property.

Table 1; Amphibians and Reptiles Observed During Vernal Pool Survey

Common Name	Scientific Name
Spotted salamander	*Ambystoma maculatum*
Wood frog	*Rana sylvatica*
Green frog	*Lithobates damitans*

Vernal Pool Indicator Species Table 2: Egg Mass Survey Results for Vernal Pool Indicator Species

Pool	Total Egg Masses	
	Wood Frog	Spotted Salamander
1	30	90
Notes Due to water depths exceeding 5 ft. in the center of Vernal Pool 1, only peripheral areas of the pool were surveyed.		

In order to assess these pools qualitatively, the methodology described in *Best Development Practices, Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States* (Calhoun and Klemens, 2002, a.k.a. the "BDP") was used. This assessment methodology utilizes a three-tiered rating system, with the tier designation determined by examining both the biological value of the pool in conjunction with the development condition of the habitat surrounding the pool, which is the area used by vernal pool amphibians during the non-breeding season. The higher the species diversity and abundance

coupled with an undeveloped and forested landscape surrounding the pool, the higher the tier rating. Tier 1 pools are considered the highest quality pools, while Tier 3 pools are the lowest.

Vernal Pool 1 meets the biological criteria (pg. 9, Section A of the BDP) of Tier 1 vernal pools. This is due to the fact that Vernal Pool 1 met two (2) of the three (3) following criteria:

1. Supported a minimum of two breeding indicator species;
2. Supported a state-listed species (i.e., blue-spotted salamander complex); and
3. Egg mass abundance exceeded the minimum egg mass threshold of 25.

The landscape condition portion of the BDP assessment (pg. 9, Section B of the BDP) considers the level of development within 750 feet surrounding vernal pools. The assessment considers two (2) management zones, referred to as the Vernal Pool Envelope ("VPE", within 0 to 100 feet) and the Critical Terrestrial Habitat ("CTH", within 100 to 750 feet).

The landscape condition criteria for a Tier 1 pool require that it has no more than 25% existing development in the VPE and less than 50% existing development within the CTH. Vernal Pool 1 meets the landscape condition criteria for a Tier 1 pool as it has no existing development within its VPE and 12% existing development within the CTH zone.

No development is proposed within the VPE management zone of the Property's Vernal Pool. This will protect habitat that is critical to preserving vernal pool water quality and detritus sources. These areas also provide habitat for breeding adults as well as emerging metamorphs. Post development, the Vernal Pool will have 28% development within its CTH. Because the BDP recommends no more than 25% development within the CTH, Pool 1 will slightly exceed the BDP guidelines. The proposed CTH development increase is, however, within suboptimal habitat associated with early open field habitat consisting of sparse vegetation and little to no duff layer. Regardless, a Vernal Pool Buffer Enhancement Plan is proposed to compensate for

the small loss of suboptimal habitat within the CTH. It should also be noted that the Project was redesigned to eliminate any impacts to the VPE.

While the proposed impacts conform to the BDP standards, and generally occur outside primary upland terrestrial habitat favored by obligate vernal pool species, mitigation for the impacts was deemed appropriate. The following is a discussion of the proposed mitigation strategy.

Areas south of Vernal Pool 1 are currently comprised of early open field habitat that is generally considered non-optimal habitat for vernal pool obligate species. The Project was redesigned to eliminate any development within the 100-foot VPE. This redesign resulted in leaving a portion of open field habitat to the south of Vernal Pool 1 (within the VPE) as a prime opportunity for mitigation. Specifically, C-TEC is proposing to plant and under sow this area with a conservation seed mix to promote a softer ecotone transition. Where feasible (outside the shading effects of the proposed Project) trees will be planted to stimulate forest regeneration. Within the shading influence of the Project, scrub/shrub and wildflower plantings will occur. Test pits within this area revealed the need for increased fertility to support this mitigation plan. As such, it is proposed that topsoil free of noxious seed be added to the vernal pool mitigation area to sufficient depths to support the recommended plantings. All mitigation work will be conducted under the supervision and direction of an environmental monitor experienced in vernal pool buffer enhancement projects.

E. Vegetation and Wildlife

The Project Area is located primarily within an area of Early Open Field/Old Field Succession ("Early Open/Old Field") habitat with periphery areas of Upland Forest habitat and, to a lesser extent, Cool-Season Grass Hayfield. Additional habitat types located on the Property,

beyond the Project Area, include Wetland Forest. Transitional ecotones separate the various cover types including areas of emergent wet meadow and scrub/shrub habitats. These transitional areas have been grouped into adjacent habitat types due to their small sizes.

Early Open/Old Field Habitat: This habitat type area totals approximately 17 acres and is comprised of various open field species including creeping buttercup (Ranunculus repens), mullein (Verbascum), cow vetch (Vicia cracca), goldenrods (Solidago spp.), lesser daisy fleabane (Erigeron strigosus), field sorrel (Rumex acetosella), common yarrow (Achillea millefolium), and small patches of warm season grasses. The largest Early Open/Old Field habitat block is located within the Project Area (approximately 10 acres). This habitat area is characterized by sparse vegetation with patches of exposed soil. The vegetation density is a result from somewhat compacted soil surface conditions, a lack of topsoil/fertility, and limited hydrology.

These types of successional (i.e., non-forested) habitats have potential to support some of Connecticut's rarest bird species, provided they are of sufficient size. To support habitat specialists, these typically need to be a minimum patch size of 10 acres. Open field block size at the Property is approximately 12 acres and bisected by Wetland 1. The open field within the Project Area totals approximately 12.5 acres. As such, it is at the approximate minimum patch size for potentially supporting habitat specialists. During field inspections at the Property, no typical habitat specialists were observed. Further, based on consultations with the CTDEEP NDDB, no records for rare species potentially utilizing this field have been identified.

These early-successional are also capable of supporting habitat specialists that do not require as large a patch size. These are species often associated with the brushy and infrequently maintained field edges that often develop on small farms. Such species include the song sparrow,

northern mockingbird and indigo bunting, among others. This habitat type will not be entirely lost as similar habitat exists on-Property to the north.

Upland Forest: This habitat type comprises the northern and southern peripheries of the Property. In addition, the southern portion of the Project Area consists of a narrow strip of forested upland habitat that borders the open field on steep slopes. These forested areas are dominated by complexes of Eastern hemlock (Tsuga canadensis), red maple (Acer rubrum), eastern white pine (Pinus strobus), and northern red oak (Quercus rubra). Suppressed overstory species include white oak (Quercus alba), and pignut hickory (Carya ovata). This habitat type covers approximately 13 acres of the Property. A majority of the forested areas consist of closed canopies with even aged forest. The understory is dominated by lowbush blueberry (Vaccinium angustifolium), beaked hazelnut, huckleberry (Gaylussacia baccata), musclewood (Carpinus caroliniana), and hophornbeam (Osrya virbiniana).

Since this small forest block has been fragmented (mostly consisting of "edge" forest with no "core" forest habitat present), habitat favored by larger wildlife species is not ideal. Generalist wildlife species that are tolerant of human disturbance would be expected such as raccoon (Procyon lotor), striped skunk (Mephitis mephitis), grey squirrel (Sciurus carolinensis), Virginia opossum (Didelphus virginiana), and eastern chipmunk (Tamias striatus).

Larger species such as coyote (Canis latrans), grey fox (Urocyon cinereoargunteus), white tailed deer (Odocolieus virginianus) and fisher (Martes pennant) also potentially take advantage of this habitat.

Impacts to forested habitat resulting from development of the Project would be isolated to a single narrow patch located south of the Project Area (and north of Wetland 2). A majority of the approximately 0.84 acre of forest where tree removal is proposed is located in "edge" forest

habitat resulting from maintaining the Property's open field areas. No "core" forested habitat will be impacted by the Project. However, the Upland Forest within the Project Area is located along steep slopes where existing vegetation provide cover within the riparian corridor of Quinnatisset Brook (Wetland 2). As a result of the removal of some edge forest habitat and potential impacts to the supporting riparian corridor, the mitigation plan described above relating to Wetland 2 will be implemented.

Cool-Season Grass Hayfield: This habitat type is isolated to the southeast corner of the Property, abutting to the east of the Project Area. Generally, the existing electrical transmission corridor, Route 395 and Wetland 2 bound this habitat type. It appears that the hayfield is harvested twice a year. Species dominant are typical of most cool-season grass hayfields found throughout the northeast United States. This habitat type covers approximately 10 acres of the Property. The eastern extents of the Project Area slightly encroach into this area.

Wetland Forest: This habitat type comprises a small percentage of the Property and is associated with both riparian corridors associated with Wetland 1 and 2. This habitat type is approximately 9.1 acres of the Property. A majority of these areas are dominated by edge wetland forest. However interior portions of Wetland 1 do consist of some emergent and scrub/shrub habitats. In addition, a larger area of emergent meadow does occur adjacent to the northeastern portions of Wetland 1. Both Wetland 1 and 2 also contain areas of open water.

F. Rare Species

APT reviewed the most recent CTDEEP NDDB mapping (September 2015). Based on the NDDB mapping, the Property is not located within an area that Threatened, Endangered, or Special Concern species or critical habitats exist. On May 18, 2016, APT submitted a review request to the CTDEEP NDDB with respect to this Project to determine if any of the

abovementioned concerns exist at the Property. On June 6, 2016, APT received a response from CT DEEP stating that they "do not anticipate negative impacts to State-listed species (RCSA Sec. 26-306) resulting from your proposed activity at the site based upon the information contained within the NDDB." See Environmental Assessment, Appendix B.

G. Groundwater

Groundwater underlying the Property is classified by the CTDEEP as "GA". This classification indicates groundwater within the area is presumed to be suitable for human consumption without treatment. Designated uses in GA-classified areas include existing private and potential public or private supplies of drinking water and base flow for hydraulically-connected surface water bodies. Based upon a review of available CTDEEP mapping, the Property is not located within a mapped preliminary or final Aquifer Protection Area ("APA"). A preliminary (Level B) mapped APA (Thompson Preliminary 70) is located approximately one (1) mile north of the Property. A final (Level A Adopted) APA (Park Street A 112) is located approximately 2.25 miles south of the Property.

Based upon CTDEEP mapping, the Property is located in Major Drainage Basin 3 (Thames River), Regional Basin 33 (French River), and Sub-Regional Drainage Basin 3300 (French River). Portions of the Property appear to be included in two (2) Local Drainage Basins. The northern portion of the Property is located within Local Drainage Basin 3300-09 (Unnamed brook at mouth at confluence of Quinnatisset Brook above French River). The southern portion of the Property is located within Local Drainage Basin 3300-10 (Quinnatisset Brook at mouth at confluence of unnamed brook above French River).

Two (2) named surface water bodies are located on portions of the Property. Little Mountain Brook is located on the northeast portion of the Property and Quinnatisset Brook is

located on the southern portion of the Property along Ballard Road. Little Mountain Brook and Quinnatisset Brook are both classified by the CTDEEP as a Class A surface water bodies. Designated uses for Class A surface water bodies include habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; and water supply for industry and agriculture.

H. Scenic Areas

No State or locally-designated scenic roads or other scenic areas are located on or proximate to the Property.

I. Historic and Archaeological Resources

APT reviewed relevant historic and archaeological information to determine whether the Property holds potential cultural resource significance. No historical resources on or eligible for listing on the National register of Historic Places exist at the Property. The nearest historic resource, the George Pickering Nichols Historic House, is located across Thompson Road (Rte. 193) to the north of the Property, while the Thompson Hill Historic District is located approximately 0.25 miles to the northeast.

There are reported archaeological sites in the general area, but none that extend or are located on the Property or proposed Project Area. Historically the Property had been mined for topsoil, sand and gravel. As a result, the Property no longer retains depository integrity. All reported archaeological sites are located to the northwest of the Property, around the West Thompson Reservoir, French River and Mechanicsville Pond areas.

Based on this information, it is evident that the Project Area has been thoroughly disturbed and no longer possesses the potential to yield intact archaeological deposits. In addition, the Project would not result in any impacts to the viewshed of the George Pickering

Nichols Historic House, the Thompson Hill Historic District or the Connecticut Airline Trail State Park.

APT submitted Project and Property historic/cultural information to SHPO for agency review and comment on May 26, 2016. Once received, a copy of the SHPO determination letter will be provided to the Council. See Environmental Assessment, Appendix C.

J. Geology and Soils

Surficial materials encompassing the Property and surrounding area are comprised of deposits of sand and gravel, gravel, and sand and gravel overlying sand. Soils located on and in the vicinity of the Property are identified as Hinckley loamy sand, Sudbury sandy loam, Catden and Freetown soils, Scarboro muck, and Udorthents-Urban land complex. Bedrock geology beneath the Property is identified as Tatnic Hill Formation. Tatnic Hill Formation is described as a medium to dark-gray, medium-grained gneiss or schist composed of quartz, andesine, biotite, garnet, and sillimanite, locally kyanite, muscovite, or K-feldspar, interlayered with locally mappable units and thinner layers of rusty-weathering graphitic pyrrhotitic two-mica schist, amphibolite, and calc-silicate rock.

K. Floodplain Areas

APT reviewed the United States Federal Emergency Management Agency ("FEMA") Flood Insurance Rate Maps ("FIRM") for the Property. A FIRM is the official map of a community on which FEMA has delineated both the special hazard areas and risk premium zones applicable to the community. Portions of the Property are mapped on two (2) FIRM maps. The northern portion of the Property is mapped on FIRM PANEL #090117 0012 B, dated November 1, 1984. Based upon the reviewed FIRM Map, the northern portion of the Property is located in an area designated as Zone C, which is defined as an area of minimal flooding. The

central and southern portions of the Property are mapped on FIRM PANEL #090117 0014 B, dated November 1, 1984. Based upon the reviewed mapping, low-lying areas associated with Little Mountain Brook and Quinnatisset Brook are designated as Zone A, which is defined as a high risk flood area. Remaining portions of the Property, roughly located between the low-lying areas of Little Mountain Brook and Quinnatisset Brook are designated as Zone C, areas of minimal flooding.

L. Recreational Areas

The nearest recreational area is the Connecticut Airline Trail State Park which abuts the Property boundary to the west. Additional recreation areas are located in the Town but not proximate to the Property.

M. Noise

A Noise Evaluation Study was prepared for the Project by HMB Acoustics LLC of Avon, Connecticut. See Environmental Assessment, Appendix G. Based on sound measurements obtained at the Property and adjacent locations, the average levels range from 32 to 37 dBA. The only equipment proposed for the Project that would generate noise consists of the fans associated with the inverters. The Noise Evaluation Study determined that after the Project is constructed and in service, the combined noise levels will comply with CTDEEP criteria for Commercial Emitters to both Commercial and Residential Receiver Zones.

After the Project is constructed and in service, the highest noise level at an adjacent property is anticipated to be 45dBA, which is well below the most conservative criteria of 55 dBA for daytime, as established by the State of Connecticut Noise Control regulations (RCSA 22a-69-1 through -7). The inverters are inactive at night. During those times the inverters are

operative, noise levels at nearby property lines and/or residences would not change substantially and continue to be well below applicable criteria (estimated at 28 to 45 dBA).

N. Lighting

No artificial lighting exists at the Property today and no such lighting is planned to be installed.

O. Other Surrounding Features

The locations of non-residential development and other resources within two miles of the Property are listed in the Environmental Assessment, p.18, Table 3 and depicted on Environmental Assessment, p.19, Figure 4.

P. Local, State and Federal Land Use Plans

The Project is consistent with local, State, and Federal land use plans, including the 2010-2020 Town of Thompson Plan for Conservation and Development (TPCD) which outlines the need for expanding "the use of photovoltaic panels...at Town owned facilities, private businesses and residential dwellings". TPCD states that "over reliance on fossil fuels is acknowledged to be a substantial problem for Thompson, and society in general and is likely to remain a problem in the near future". This Project will support TPCD's policies and strategies by developing a renewable energy resource while not having a substantial adverse environmental effect.

Q. Roads

The existing access drive originating off Thompson Road (Rte. 193) will be used during construction and for permanent access to maintain and monitor the Project. Minimal upgrades would be required for the access road. Developing a stable gravel apron, regrading/reestablishing select areas along the existing access drive and the installation of one (1), 16-foot-wide, chain link security access gate south of the intersection of Thompson Road is all that would be

required. A secondary access road is located to the southeast of the Project on Ballard Road. This access road would not be used in association with the Project but will continue to be used by the property owner for access to portions of the Property. The existing security gate will be upgraded to one similar to the proposed gate on Thompson Road. During construction, temporary interior field roads would be used to access construction locations.

R. Rare Species

No rare species will be impacted by the Project. In a June 6, 2016 letter, CTDEEP confirmed that they "do not anticipate negative impacts to State-listed species (RCSA Sec. 26-306) resulting from your proposed activity at the site based upon the information contained within the NDDB." See Environmental Assessment, Appendix F.

S. Northern Long-eared Bat

One federally-listed threatened species is known to occur in the vicinity of the Property, the northern long-eared bat ("NLEB"; Myotis septentrionaiis). NLEB range encompasses the entire State of Connecticut. Suitable NLEB roost habitat includes trees (live, dying, dead, or snag) with a diameter at breast height ("DBH") of three (3) inches or greater. The proposed Project will result in the removal of trees greater than three (3) inches DBH. Therefore, since NLEB potentially occurs in the vicinity of the Property, the Property supports potential habitat for NLEB and the proposed activity may potentially impact its habitat, a determination of compliance with Section 10 of the ESA is required. The NLEB areas of concern in Connecticut to assist with Federal Endangered Species Act Compliance map (February 1, 2016) was reviewed to determine the locations of any known maternity roost trees or hibernaculum. This map reveals that there are currently no known NLEB maternity roost trees in Connecticut. The nearest NLEB habitat resource to the Project Area is located in East Granby approximately 43

miles to the west. In accordance with the USFWS Key for NLEB, the Project will not likely result in an adverse effect or incidental take of NLEB and does not require a permit from USFWS. Therefore, no further consultation with USFWS is required for the proposed activity. See Environmental Assessment, Appendix F.

T. Water Quality

The Project will be unstaffed and no potable water uses or sanitary discharges are planned. No liquid fuels are associated with the operations of the Project. Once operative, the stormwater generated by the proposed development will be properly handled and treated in accordance with the 2004 Connecticut Stormwater Quality Manual. Therefore, upon its completion the Project would have no adverse environmental effect on wetlands, watercourses or other water resources.

No APAs are located on or proximate to the Property. Little Mountain Brook is located on the northeast portion of the Property and Quinnatisset Brook is located on the southern portion of the Property along Ballard Road. To safeguard these resources from potential impacts during construction, C-TEC is committed to implementing protective measures in the form of a Stormwater Protection Plan. This Plan will include monitoring of established sedimentation and erosion controls that will be installed and maintained in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. C-TEC will also apply for a General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities from CTDEEP. Therefore, with the incorporation of adequate protective measures, stormwater runoff from the Project development will not result in an adverse impact to water quality associated with the surface water bodies located on the Property.

U. Air Quality

No emission sources are associated with the operations of the Project. Therefore, no impacts to air quality are anticipated as part of the proposed Project.

V. Scenic Areas

No state designated scenic areas would be physically or visually impacted by development of the solar Project.

W. Geology and Soils

No adverse effects are anticipated on natural resources occurring at and/or nearby the Property. Once vegetative clearing activities are completed, minimal grading is required for construction of the Project.

X. Visibility

The solar panels and appurtenances will not exceed a height of approximately six (6) feet above ground. The proposed overhead electric utility poles required for interconnection with the existing distribution system on Thompson Road (Rte. 193) would be the tallest new features introduced as a result of development of the Project (at 35 to 40 feet high). The proposed agricultural storage barn would be approximately 15 feet tall. Some views of the Project may be possible from Interstate 395 but otherwise the Project is set back sufficiently from abutting properties and other roads and is benefited by intervening vegetation, so that the Project components will not be visible from most locations off the Property.

VI. COMMUNITY RELATIONS AND PUBLIC INPUT

Simultaneous with the filing of this petition, C-TEC sent a certified mailing to all abutting property owners notifying such owners of the filing of this petition and government officials. A copy of the correspondence sent thereto is attached hereto as **Exhibit B**.

VII. PETITION FILING FEE

In accordance with the applicable regulations, C-TEC has submitted a check to the Connecticut Siting Council to cover the petition filing fee.

VIII. CONCLUSION

The Project will provide numerous and significant benefits to the Town of Thompson, the State of Connecticut and its citizens, while producing significant environmental benefits with minimal environmental impact. Pursuant to Conn. Gen. Stat. § 16-50k(a), the Siting Council shall approve by declaratory ruling the construction or location of a distributed-side distributed resources project or facility with a capacity of not more than sixty-five (65) MW, as long as such project meets DEEP air and water quality standards. The Project meets these criteria. The Project is a "customer-side distributed resources" facility, as defined in Conn. Gen. Stat. § 16-l(a)(34) and, as demonstrated herein, the Project will meet DEEP air and water quality standards. The Project will not produce air emissions, will not utilize water to produce electricity, was designed to minimize wetland impacts, will employ a stormwater management plan that will result in no net increase in runoff to any surrounding properties, and furthers the State's energy policy by developing and utilizing renewable energy resources. In addition, as demonstrated above, the Project will not have a substantial adverse environmental effect in the State of Connecticut. Accordingly, C-TEC respectfully requests that the Siting Council approve the location, construction and operation of the Project by declaratory ruling.

Respectfully Submitted,

C-TEC Solar, LLC

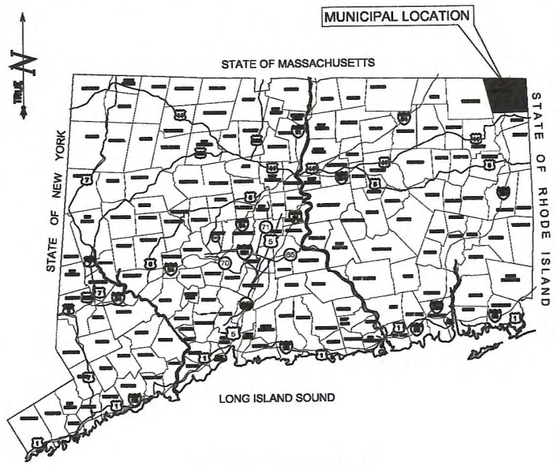
Brad N. Mondschein
Pullman & Comley, LLC
90 State House Square
Hartford, CT 06103-3702
Phone(860) 424-4319
Fax (860) 424-4370
bmondschein@pullcom.com
Its Attorney

EXHIBIT A

ENVIRONMENTAL ASSESSMENT

EXHIBIT B

COPIES OF CERTIFIED MAILING TO ABUTTERS AND GOVERNMENT OFFICIALS



C-TECSOLAR

BARRETTE FARMS

SOLAR PANEL FACILITY

1 BALLARD ROAD
THOMPSON, CT 06227

DRAWING INDEX

SITE INFORMATION

SITE NAME: "BARRETTE FARMS"
PROJECT LOCATION: 1 BALLARD ROAD
THOMPSON, CT 06277

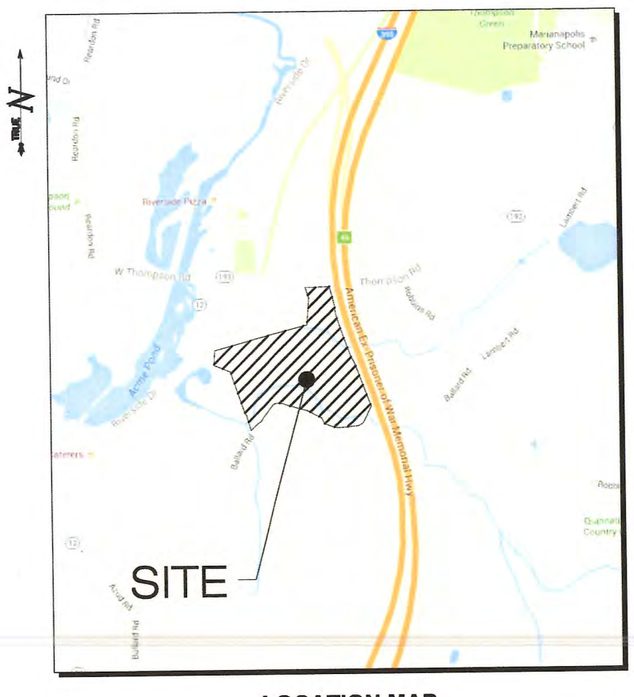
SITE TYPE/DESCRIPTION: ADD GROUND MOUNTED SOLAR PANEL ARRAYS W/ ASSOCIATED GRAVEL ACCESS DRIVE & EQUIPMENT. ADD CHAIN LINK FENCE GATE & ELECTRIC INTERCONNECTION FROM NEW FACILITY TO EXIST. ELECTRICAL GRID.

PROPERTY OWNER: BARRETTE, BERNARD J & LUCILLE T
129 ROBBINS ROAD
THOMPSON, CT 06277

ENGINEER CONTACT: BRADLEY J. PARSONS
(860) 663-1697 x208

LATITUDE: 41°56'39"N
LONGITUDE: 71°53'03"W
ELEVATION: 332'± AMSL

ZONE: I-ZONE (INDUSTRIAL)
FEMA FIRM DESIGNATION: PANEL #0901170014B - ZONE C
TOTAL SITE ACREAGE: 49.26 ACRES
TOTAL DISTURBED AREA: 14.14± ACRES



LOCATION MAP
SCALE: 1"=1000'

C-TECSOLAR
1 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860)-580-7174

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

NO	DATE	REVISION
0	07/11/16	CSC SUBMISSION
1		
2		
3		
4		
5		
6		

STATE OF CONNECTICUT
BRADLEY J. PARSONS
No. 24325
LICENSED PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD

PROF: BRADLEY J. PARSONS, P.E.
COMP: ALL POINTS TECHNOLGY CORPORATION, P.C.
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

NOTE:

C-TECSOLAR
"BARRETTE FARMS"

SITE ADDRESS: 1 BALLARD ROAD THOMPSON, CT

APT FILING NUMBER: CT481111

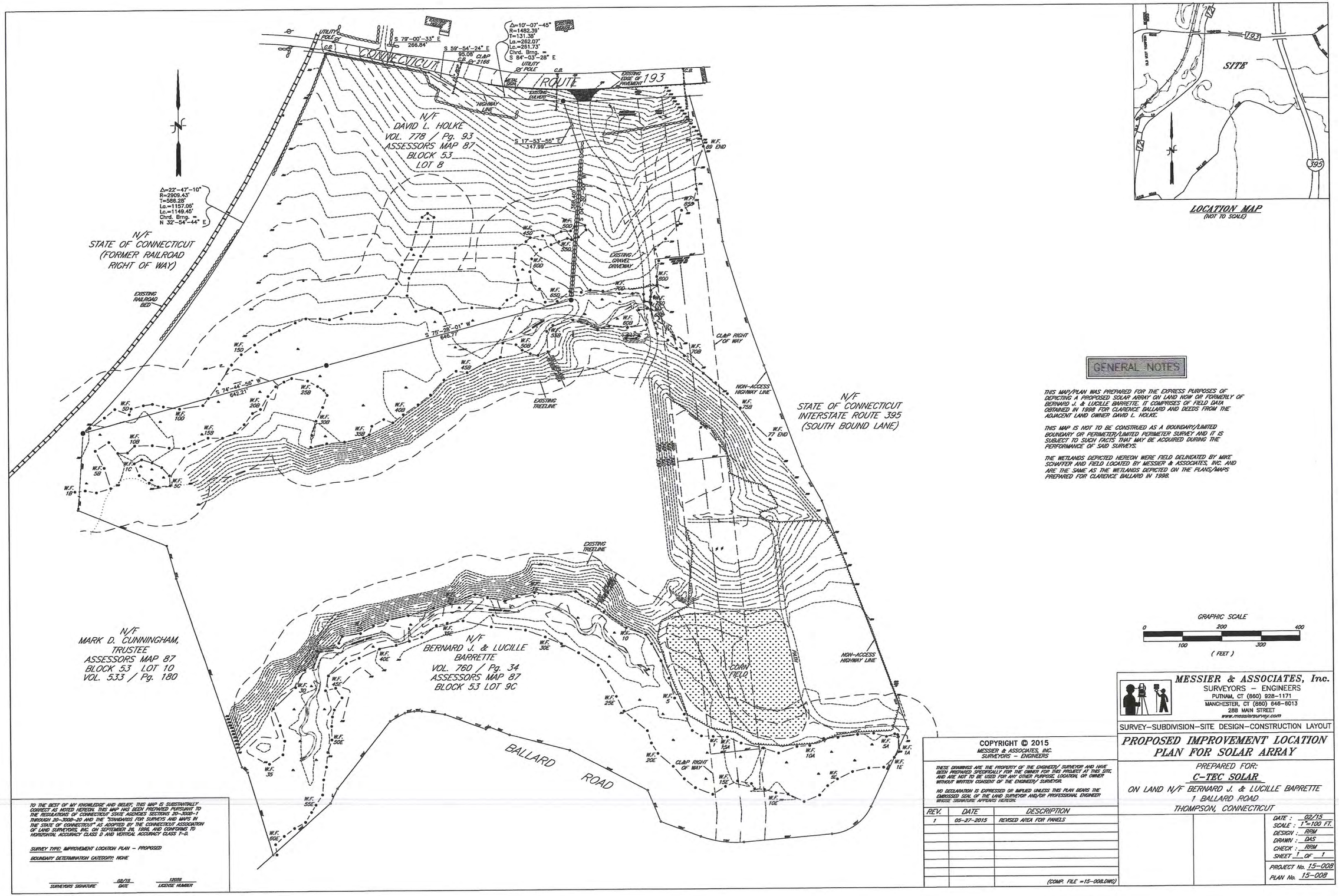
DRAWN BY: BJP

CHECKED BY: SMC

DATE: 07/11/16

SHEET TITLE:
COVER SHEET & INDEX

SHEET NUMBER:
CV-1



LOCATION MAP
(NOT TO SCALE)

GENERAL NOTES

THIS MAP/PLAN WAS PREPARED FOR THE EXPRESS PURPOSES OF DEPICTING A PROPOSED SOLAR ARRAY ON LAND NOW OR FORMERLY OF BERNARD J. & LUCILLE BARRETTE. IT COMPRISES OF FIELD DATA OBTAINED IN 1998 FOR CLARENCE BALLARD AND DEEDS FROM THE ADJACENT LAND OWNER DAVID L. HOLKE.

THIS MAP IS NOT TO BE CONSTRUED AS A BOUNDARY/LIMITED BOUNDARY OR PERIMETER/LIMITED PERIMETER SURVEY AND IT IS SUBJECT TO SUCH FACTS THAT MAY BE ACQUIRED DURING THE PERFORMANCE OF SAID SURVEYS.

THE WETLANDS DEPICTED HEREON WERE FIELD DELINEATED BY MIKE SCHAFFER AND FIELD LOCATED BY MESSIER & ASSOCIATES, INC. AND ARE THE SAME AS THE WETLANDS DEPICTED ON THE PLANS/MAPS PREPARED FOR CLARENCE BALLARD IN 1998.

GRAPHIC SCALE
0 200 400
100 300
(FEET)

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON. THIS MAP HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300B-1 THROUGH 20-300B-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996, AND CONFORMS TO HORIZONTAL ACCURACY CLASS D AND VERTICAL ACCURACY CLASS T-D.

SURVEY TYPE: IMPROVEMENT LOCATION PLAN - PROPOSED

BOUNDARY DETERMINATION CATEGORY: NONE

SURVEYORS SIGNATURE — 02/15 DATE — 12888 LICENSE NUMBER

REV.	DATE	DESCRIPTION
1	05-27-2015	REVISED AREA FOR PANELS

(COMP. FILE =15-008.DWG)

MESSIER & ASSOCIATES, Inc.
SURVEYORS - ENGINEERS
PUTNAM, CT (860) 928-1171
MANCHESTER, CT (860) 646-8013
288 MAIN STREET
www.messierassurvey.com

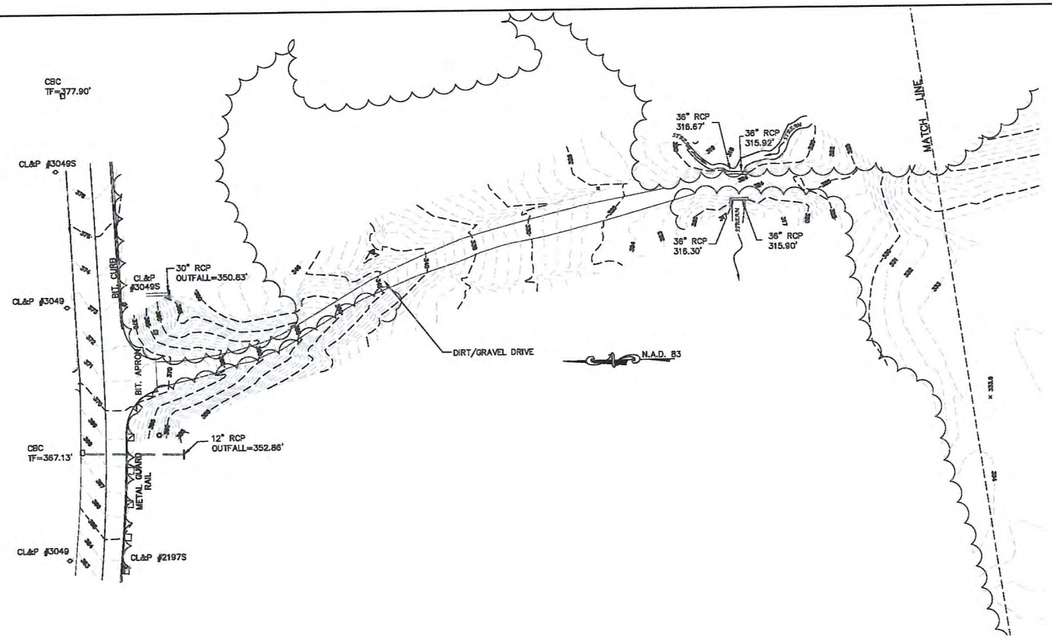
SURVEY-SUBDIVISION-SITE DESIGN-CONSTRUCTION LAYOUT

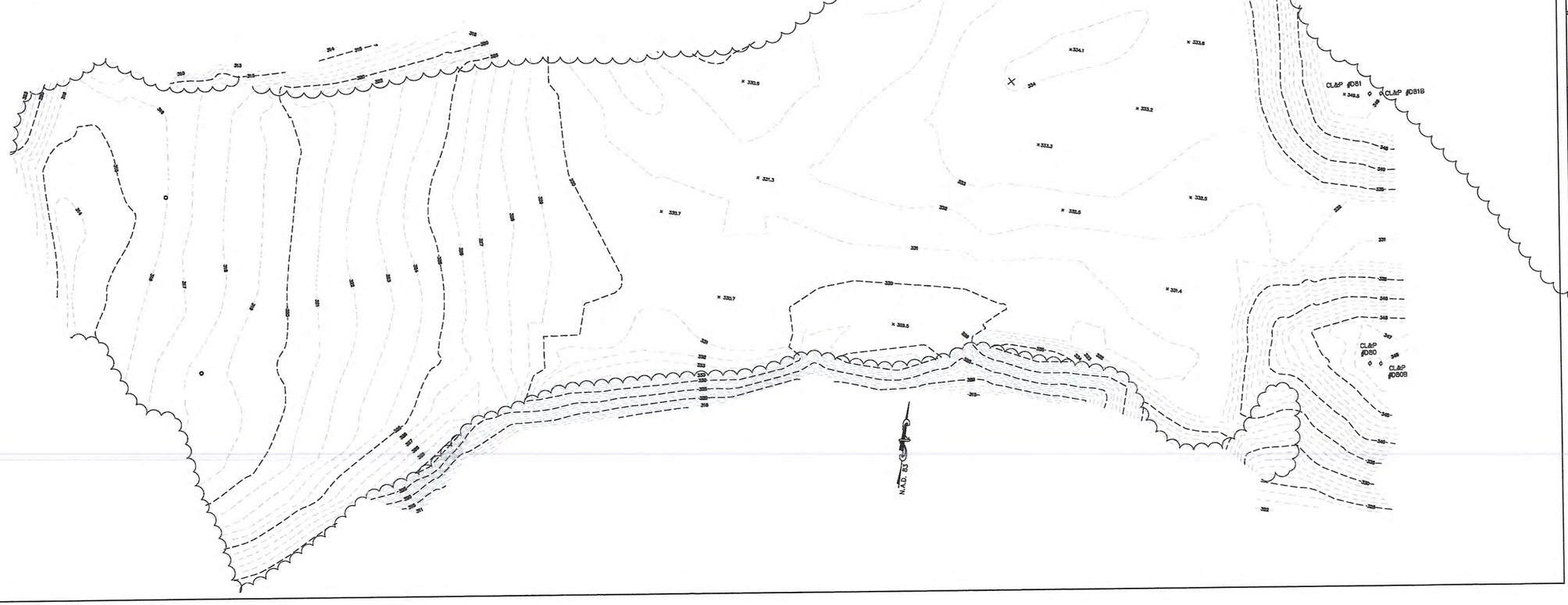
PROPOSED IMPROVEMENT LOCATION PLAN FOR SOLAR ARRAY

PREPARED FOR:
C-TEC SOLAR
ON LAND N/F BERNARD J. & LUCILLE BARRETTE
1 BALLARD ROAD
THOMPSON, CONNECTICUT

DATE : 02/15
SCALE : 1"=100 FT.
DESIGN : RRM
DRAWN : DAS
CHECK : RRM
SHEET 1 OF 1

PROJECT No. 15-008
PLAN No. 15-008





MAP NOTES:

1. THIS MAP AND SURVEY HAVE BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300□1 THROUGH 20-300□20 AND "THE MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE IF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS ON SEPTEMBER 26, 1996.
2. THE TYPE OF SURVEY PERFORMED AND THE MAPPED FEATURES DEPICTED HEREON ARE IN ACCORDANCE WITH THE REQUIREMENTS OF A TOPOGRAPHIC SURVEY.
3. THE HORIZONTAL BASELINE CONFORMS TO A CLASS A-2 ACCURACY. THE VERTICAL BASELINE CONFORMS TO A CLASS V-2 ACCURACY. THE TOPOGRAPHIC FEATURES CONFORM TO A CLASS T-2 ACCURACY.
4. THE NORTH ARROW AND BEARINGS ARE BASED UPON THE CONNECTICUT STATE COORDINATE SYSTEM N.A.D. 1983 (2011). THE ELEVATIONS ARE BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) USING GEOID 12A.
5. UNDERGROUND UTILITIES, STRUCTURES AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE COMPANIES OR GOVERNMENTAL AGENCIES AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE. THE EXISTENCE WHICH IS UNKNOWN TO MARTIN SURVEYING ASSOCIATES, LLC. ALL CONTRACTORS ARE REQUIRED TO CONTACT CALL-BEFORE-YOU-DIG AT 1-800-922-4455 FOR LOCATION AND OR STAKEOUT OF ANY UTILITY PRIOR TO ANY EXCAVATION.

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

DEAN MARTIN — LICENSE NO. 70147

THIS DOCUMENT AND COPIES THEREOF ARE VALID ONLY IF THEY BEAR THE SIGNATURE AND EMBOSSED SEAL OF THE DESIGNATED LICENSED PROFESSIONAL. UNAUTHORIZED ALTERATIONS TO THIS PLAN RENDER THE DECLARATION HEREON NULL AND VOID.

LEGEND:

- IRON PIN (FOUND)
- Rebar/Drill Hole (To Be Set)
- MONUMENT (FOUND)
- SIGN
- MANHOLE
- "C" CATCH BASIN
- "C-L" CATCH BASIN
- SHRUB/BUSH
- DECIDUOUS TREES
- EVERGREEN TREES
- FLAG POLE
- POST
- TRAFFIC CONTROL BOX
- LIGHT POLE
- GUY ANCHOR
- UTILITY POLE
- WATER GATE
- WATER METER
- GAS VALVE
- GAS METER
- TRANSFORMER
- ELEC. METER
- MAIL BOX
- HAND HOLE
- BUTTON BOX
- A.C. UNIT
- TRAFFIC LIGHT POLE

- BOUNDARY LINE
- GUARD RAIL
- UNDERGROUND PIPING (San.,Strm.)
- G — U/G GAS LINE
- E — U/G ELEC. LINE
- W — WATER LINE
- OVERHEAD UTILITIES
- T — U/G TELE. LINE
- CHAIN LINK FENCE
- TREE LINE

martin
Surveying Associates, LLC
201 CHRISTIAN LANE BERLIN, CT 06037
860-832-9328 860-357-4604 (FAX)

REVISIONS:

MSA PROJECT NO: 16-097

SCALE: 1" = 60'

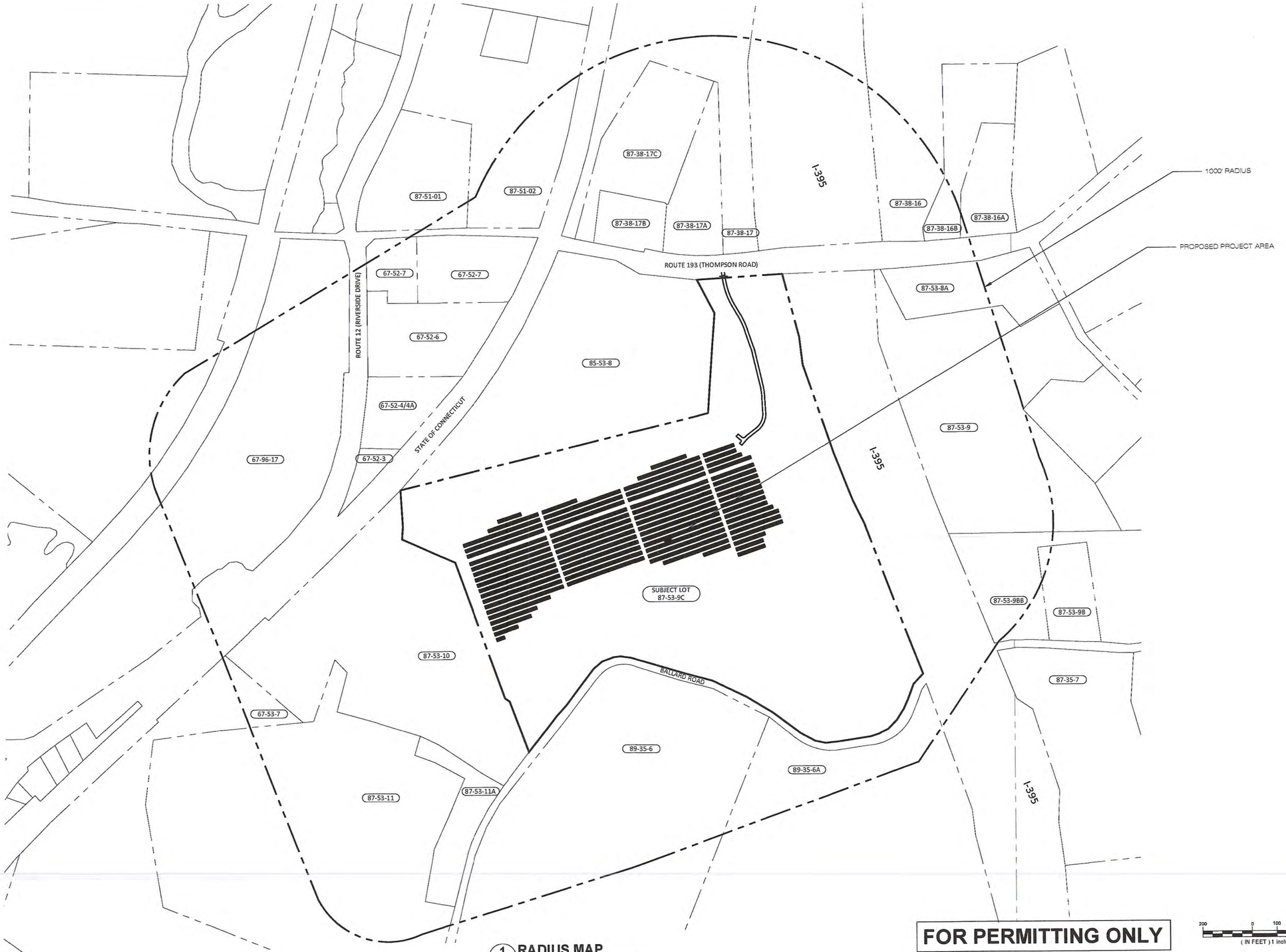
DATE: 6/9/16

DRAWN BY: G.S.D.

CHECKED BY: D.G.M.

SHEET:

1 OF 1



1 R-1 **RADIUS MAP**
SCALE: 1" = 200'

FOR PERMITTING ONLY

200 0 100 200 400
(IN FEET) 1 inch = 200 ft.

C-TECSOLAR
1 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860)-580-7174

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

NO	DATE	REVISION
0	07/11/16	CSC SUBMISSION
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4		
5		
6		

STATE OF CONNECTICUT
BRADLEY J. PARSONS
No. 25025
LICENSED PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD

PROF: BRADLEY J. PARSONS, P.E.
COMP: ALL POINTS TECHNOLGY CORPORATION, P.C.
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

NOTE:

C-TECSOLAR
"BARRETTE FARMS"

SITE ADDRESS: 1 BALLARD ROAD THOMPSON, CT

APT FILING NUMBER: CT481111

DRAWN BY: BJP

CHECKED BY: SMC

DATE: 07/11/16

SHEET TITLE:

RADIUS MAP

SHEET NUMBER:

R-1

MAP	BLOCK	LOT	PROPERTY ADDRESS	TOWN	OWNER NAME	MAILING ADDRESS
87	53	9 C	0 Ballard Rd	Thompson	Bernard J & Lucille T Barrette	129 Robbins Rd., Thompson, CT 06277
87	38	17 A	54 Thompson Rd	Thompson	Raymond E & Sharon M Olsen	PO Box 410, Thompson, CT 06277
87	38	17	0 Thompson Rd	Thompson	Alfred & Cheryl Gerwatowski	34 Thompson Rd., Thompson, CT 06277
85	39	NA	209 Thompson Hill Rd	Thompson	State of Connecticut Dept of Transportation	2800 Berlin Tpke., Newington, CT 06111
87	38	16	90 Thompson Rd	Thompson	Francis D Knapik & Nancy S Besardi	90 Thompson Rd., Thompson, CT 06277
87	53	9	22 Robbins Rd	Thompson	Ka H Wong	22 Robbins Rd., Thompson, CT 06277
87	53	9 BB	0 Ballard Rd	Thompson	Bernard J & Lucille T Barrette	129 Robbins Rd., Thompson, CT 06277
87	35	7	0 Ballard Rd	Thompson	Bernard J & Lucille T Barrette	129 Robbins Rd., Thompson, CT 06277
89	35	6 A	0 Ballard Rd	Thompson	Robert B & Carol R Smith	31 Robbins Rd., Thompson, CT 06277
89	35	6	0 Ballard Rd	Thompson	Jill O Duszlak	PO Box 6, Oxford, MA 01540
87	53	10	0 Ballard Rd	Thompson	Mark D Cunningham	2 Danny Trail, Vernon, CT 06066
87	52	3	0 Riverside Dr	Thompson	Mark D Cunningham	2 Danny Trail, Vernon, CT 06066
87	53	8	0 Thompson Rd	Thompson	David L Holke	38 Town Farm Rd., Woodstock, CT 06281
87	None	None	I-395 ROW	Thompson	State of Connecticut Dept of Transportation	2800 Berlin Tpke., Newington, CT 06111
87	None	None	Airline Trail	Thompson	State of Connecticut DEP (now Department of Energy and Environmental Protection)	79 Elm St., Hartford, CT 06106-5127

1 R-2 ABUTTING PROPERTY OWNERS' LIST

FOR PERMITTING ONLY

C-TECSOLAR
1 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860)-580-7174

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419
PHONE: (860)-663-1697 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

NO	DATE	REVISION
0	07/11/16	CSC SUBMISSION
1		
2		
3		
4		
5		
6		

STATE OF CONNECTICUT
BRADLEY J. PARSONS
No. 25025
LICENSED PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD
PROF: BRADLEY J. PARSONS, P.E.
COMP: ALL POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

NOTE:

C-TECSOLAR
"BARRETTE FARMS"

SITE ADDRESS: 1 BALLARD ROAD THOMPSON, CT
APT FILING NUMBER: CT481111
DRAWN BY: BJP
CHECKED BY: SMC
DATE: 07/11/16

SHEET TITLE:
ABUTTER PROPERTY OWNERS' LIST

SHEET NUMBER:
R-2

EXISTING WETLAND LIMIT (TYP.)

100' WETLAND SETBACK (TYP.)

PROPERTY LINE (TYP.)

BUILDING SETBACK LINE (TYP.)

APPROXIMATE LOCATION OF 100-YEAR FEMA FLOOD LINE (TYP.)

SP-3

SP-1

SP-2

EXISTING WETLAND LIMIT (TYP.)

APPROXIMATE LOCATION OF 100-YEAR FEMA FLOOD LINE (TYP.)

FOR PERMITTING ONLY

100 0 50 100 200

(IN FEET) 1 inch = 100 ft.

C-TECSOLAR

1 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860)-580-7174

ALL-POINTS TECHNOLOGY CORPORATION

3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

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STATE OF CONNECTICUT
BRADLEY J. PARSONS
No. 26025
LICENSED PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD

PROF: BRADLEY J. PARSONS, P.E.
COMP: ALL POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

NOTE:

C-TECSOLAR
"BARRETTE FARMS"

SITE ADDRESS: 1 BALLARD ROAD THOMPSON, CT

APT FILING NUMBER: CT481111

DRAWN BY: BJP

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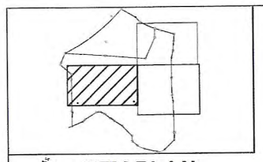
DATE: 07/11/16

SHEET TITLE:

OVERALL SITE PLAN

SHEET NUMBER:

SP-0



KEY PLAN

APPROXIMATE LOCATION OF 100-YEAR FEMA FLOOD LINE (TYP.)

3 / DN-1 PROPOSED SOLAR PANEL ARRAY (TYP.) (11,200 TOTAL PANELS)

PROPOSED 11.5' SPACING BETWEEN ARRAY ROWS (TYP.)

1 / DN-1 PROPOSED UNDERGROUND ELECTRICAL TRENCH. FINAL LOCATION TO BE DETERMINED (TYP.)

100' WETLAND SETBACK (TYP.)

20'±

25'±

1605'±

BUILDING SETBACK LINE(TYP.)

PROPERTY LINE (TYP.)

APPROXIMATE LOCATION OF 100-YEAR FEMA FLOOD LINE (TYP.)

PROPOSED CLEARING LIMITS (TOTAL PROJECT CLEARING AREA = 0.84± ACRES, 36,390± SF) CLEARING ACTIVITIES INCLUDE THE REMOVAL OF TREES AS DETAILED IN THE TREE SURVEY (SEE NOTES FOR ADDITIONAL INFORMATION)

QUINNATISSET BROOK

BERNARD J. & LUCILLE N/F VOL. 760

EXISTING TREELINE

100' WETLAND REVIEW AREA

FOR PERMITTING ONLY

(IN FEET) 1 inch = 40 ft.

MATCHLINE: SEE SHEET SP-2

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ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

NOTE:

C-TECSOLAR
"BARRETTE FARMS"

SITE ADDRESS: 1 BALLARD ROAD THOMPSON, CT

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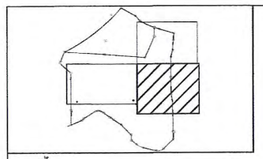
SHEET TITLE:

SITE PLAN

SHEET NUMBER:

SP-1



KEY PLAN

MATCHLINE: SEE SHEET SP-3

MATCHLINE: SEE SHEET SP-1

PROPOSED CLEARING LIMITS (TOTAL PROJECT CLEARING AREA - 0.84± ACRES, 36,390± SF) CLEARING ACTIVITIES INCLUDE THE REMOVAL OF TREES AS DETAILED IN THE TREE SURVEY (SEE NOTES FOR ADDITIONAL INFORMATION)

PROPOSED UTILITY POLE AND OVERHEAD WIRES (TYP.) (BY OTHERS)

2 DN-1 PROPOSED 12' WIDE GRAVEL MAINTENANCE DRIVE (TYP.)

6,7 DN-1 PROPOSED 15'X20' CONCRETE PAD FOR ELECTRICAL EQUIPMENT W/(20) 6" BOLLARDS @ 4' O.C.

6 DN-1 PROPOSED 20'X20' CONCRETE PAD FOR EQUIPMENT SHED

1 DN-1 PROPOSED UNDERGROUND ELECTRICAL TRENCH, FINAL LOCATION TO BE DETERMINED (TYP.)

100' WETLAND SETBACK (TYP.)

WETLAND LIMIT (TYP.)

BUILDING SETBACK LINE (TYP.)

NON-ACCESS HIGHWAY LINE (PROPERTY LINE)

N/F STATE OF CONNECTICUT INTERSTATE ROUTE 395 (SOUTH BOUND LANE)

11.5'±

PROPOSED 11.5' SPACING BETWEEN ARRAY ROWS (TYP.)

3 DN-1 PROPOSED SOLAR PANEL ARRAY (TYP.) (11,200 TOTAL PANELS)

PROPOSED CLEARING LIMITS (TOTAL PROJECT CLEARING AREA - 0.84± ACRES, 36,390± SF) CLEARING ACTIVITIES INCLUDE THE REMOVAL OF TREES AS DETAILED IN THE TREE SURVEY (SEE NOTES FOR ADDITIONAL INFORMATION)

FOR PERMITTING ONLY

40 0 20 40 80
(IN FEET) 1 inch = 40 ft.

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STATE OF CONNECTICUT
BRADLEY J. PARSONS
No. 25025
LICENSED PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD

PROF: BRADLEY J. PARSONS, P.E.
COMP: ALL POINTS TECHNOLGY CORPORATION, P.C.
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

NOTE:

C-TECSOLAR
"BARRETTE FARMS"

SITE ADDRESS: 1 BALLARD ROAD THOMPSON, CT

APT FILING NUMBER: CT481111

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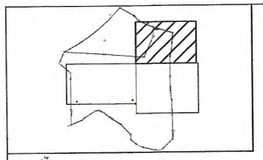
SHEET TITLE:

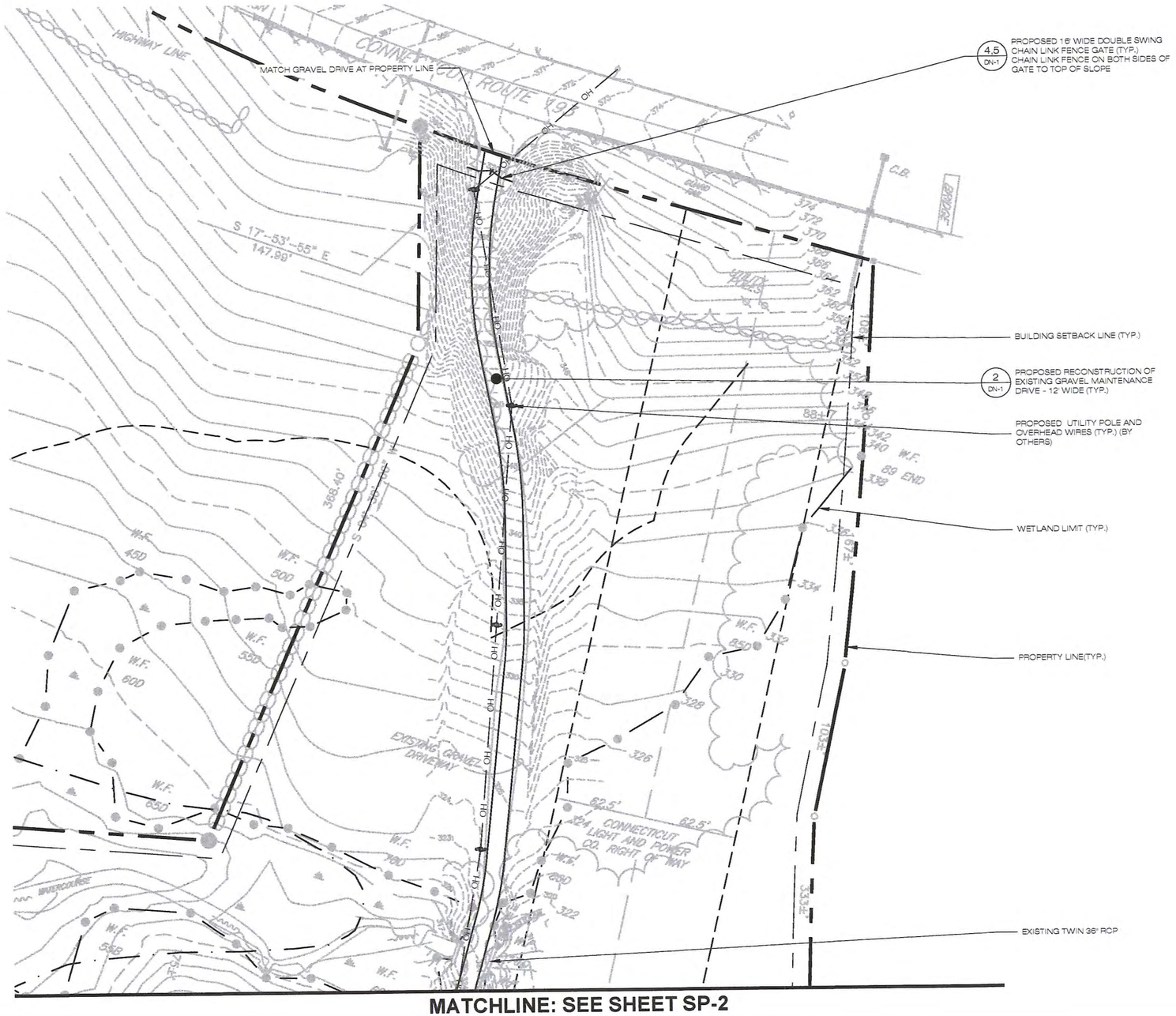
SITE PLAN

SHEET NUMBER:

SP-2



KEY PLAN



MATCHLINE: SEE SHEET SP-2

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(IN FEET) 1 inch = 40 ft.

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STATE OF CONNECTICUT
BRADLEY J. PARSONS
No. 15025
LICENSED PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD

PROF: BRADLEY J. PARSONS, P.E.
COMP: ALL POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

NOTE:

C-TECSOLAR
"BARRETTE FARMS"

SITE ADDRESS: 1 BALLARD ROAD THOMPSON, CT

APT FILING NUMBER: CT481111

DRAWN BY: BJP

CHECKED BY: SMC

DATE: 07/11/16

SHEET TITLE:

SITE PLAN

SHEET NUMBER:

SP-3

EXISTING WETLAND LIMIT (TYP.)

100' WETLAND SETBACK (TYP.)

PROPERTY LINE (TYP.)

BUILDING SETBACK LINE (TYP.)

GD-3

GD-2

GD-1

EXISTING WETLAND LIMIT (TYP.)

APPROXIMATE LOCATION OF 100-YEAR FEMA FLOOD LINE (TYP.)

FOR PERMITTING ONLY

(IN FEET) 1 inch = 100 ft.

C-TECSOLAR

1 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860)-580-7174

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STATE OF CONNECTICUT
BRADLEY J. PARSONS
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DESIGN PROFESSIONALS OF RECORD

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ADD: 3 SADDLEBROOK DRIVE
KILLINGWORTH, CT 06419

NOTE:

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"BARRETTE FARMS"

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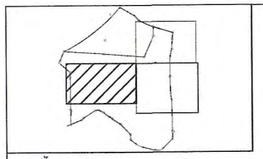
DATE: 07/11/16

SHEET TITLE:

OVERALL GRADING & DRAINAGE PLAN

SHEET NUMBER:

GD-0



KEY PLAN

APPROXIMATE LOCATION OF 100-YEAR FEMA FLOOD LINE (TYP.)

100' WETLAND SETBACK (TYP.)

BUILDING SETBACK LINE(TYP.)

PROPERTY LINE (TYP.)

APPROXIMATE LOCATION OF 100-YEAR FEMA FLOOD LINE (TYP.)

QUINNATISSET BROOK

BERNARD J. & LUCILLE N/F VOL. 760

EXISTING TREELINE

100' UPLAND REVIEW AREA

MATCHLINE: SEE SHEET GD-2

FOR PERMITTING ONLY

(IN FEET) 1 inch = 40 ft.

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KILLINGWORTH, CT 06419

NOTE:

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"BARRETTE FARMS"

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APT FILING NUMBER: CT481111

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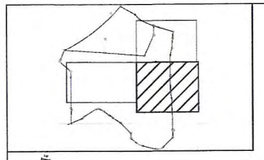
SHEET TITLE:

GRADING & DRAINAGE PLAN

SHEET NUMBER:

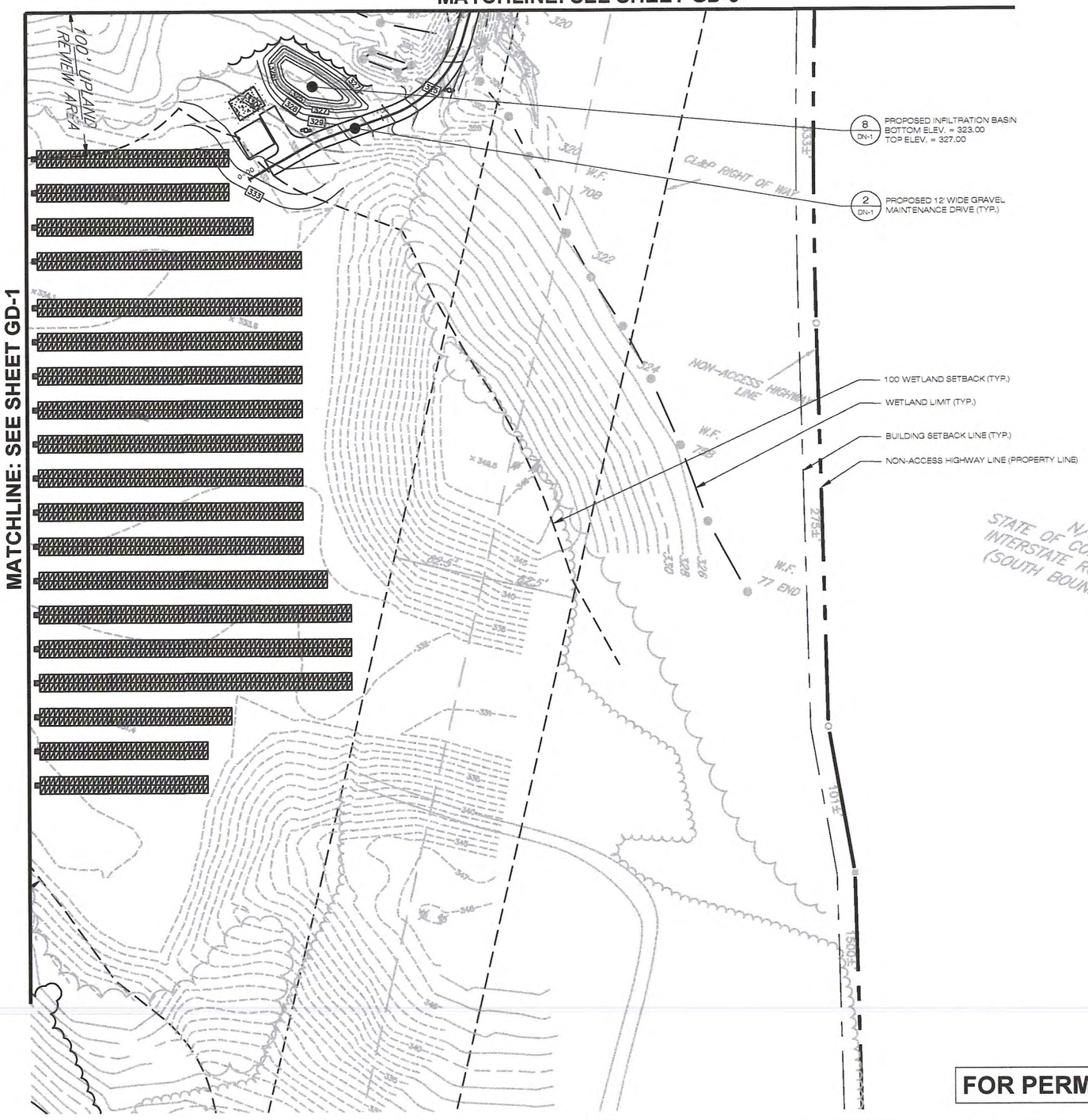
GD-1



KEY PLAN

MATCHLINE: SEE SHEET GD-3

MATCHLINE: SEE SHEET GD-1



FOR PERMITTING ONLY

(IN FEET) 1 inch = 40 ft.

C-TECSOLAR

1 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
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STATE OF CONNECTICUT
BRADLEY J. PARSONS
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LICENSED PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD

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COMP: ALL POINTS TECHNOLGY CORPORATION, P.C.
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

NOTE:

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"BARRETTE FARMS"

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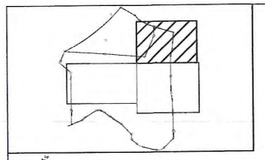
DATE: 07/11/16

SHEET TITLE:

GRADING & DRAINAGE PLAN

SHEET NUMBER:

GD-2



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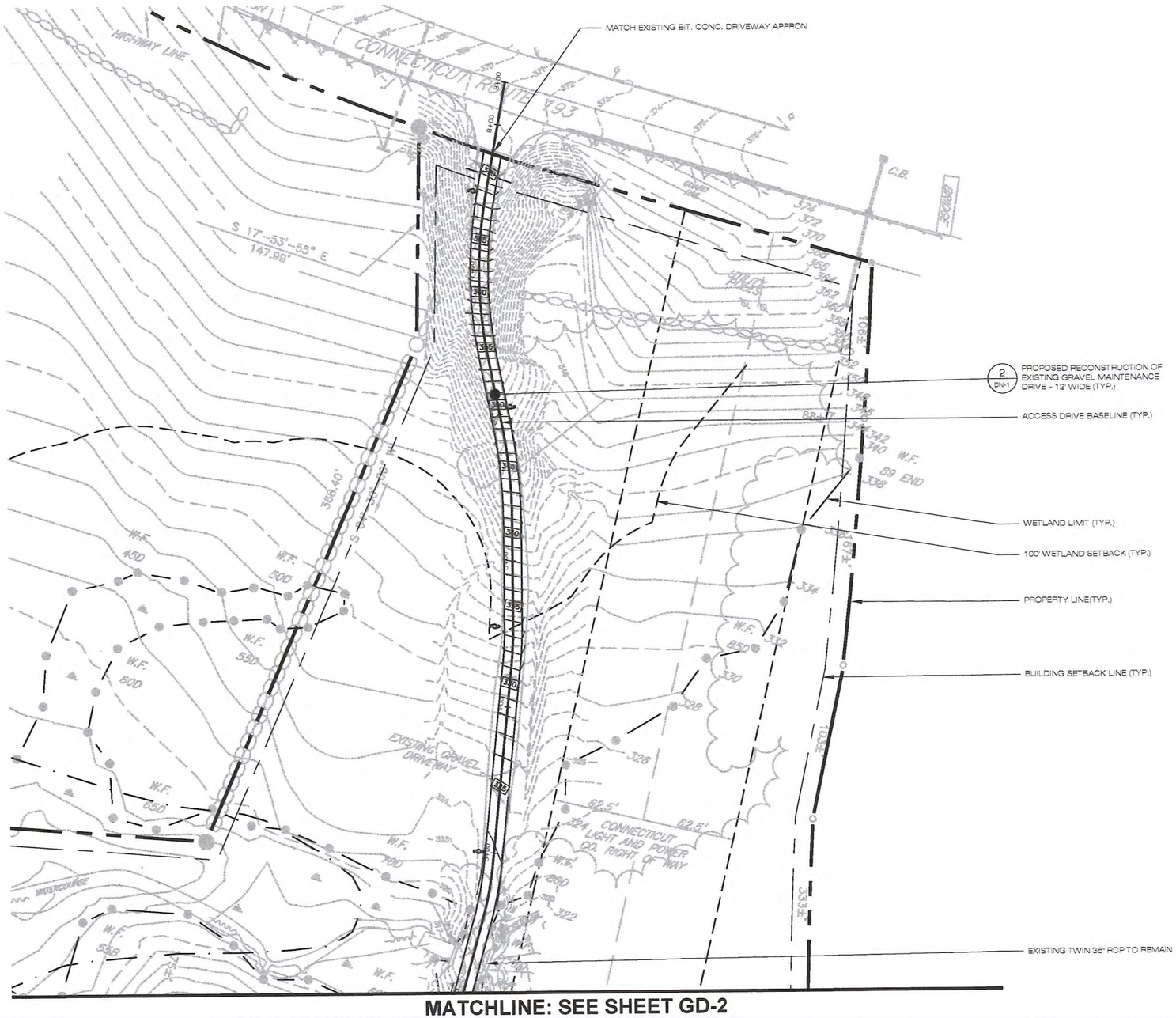

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NOTE:

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SHEET TITLE:

GRADING & DRAINAGE PLAN

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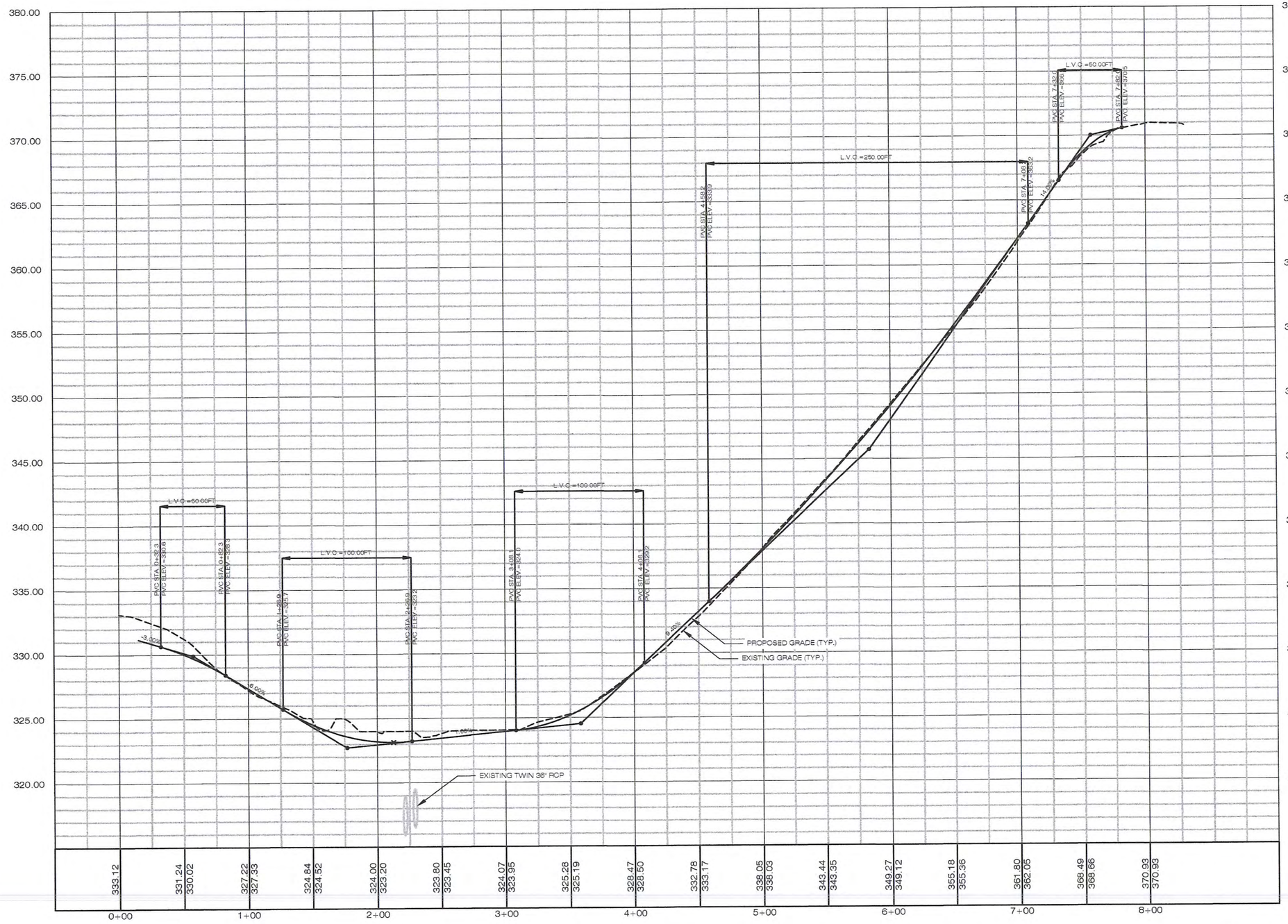
GD-3



FOR PERMITTING ONLY

(IN FEET) 1 inch = 40 ft.

(VERT. IN FEET) 1 inch = 4 ft.

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NOTE:

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DATE: 07/11/16

SHEET TITLE:

ACCESS DRIVE PROFILE

SHEET NUMBER:

PRO -1

EXISTING WETLAND LIMIT (TYP.)

100 WETLAND SETBACK (TYP.)

PROPERTY LINE (TYP.)

BUILDING SETBACK LINE (TYP.)

APPROXIMATE LOCATION OF 100-YEAR FEMA FLOOD LINE (TYP.)

VERNAL POOL BUFFER ENHANCEMENT AREA

EC-1

EC-2

EC-3

LOD

PROPOSED CLEARING LIMITS (AREA 2 CLEARING LIMITS - 0.03± ACRES 1,388± SF). CLEARING ACTIVITIES TO INCLUDE THE REMOVAL OF ALL BRUSH, TREES, & STUMPS. CLEARED MATERIAL TO BE CHIPPED & STOCKPILED. DISTURBED AREA TO BE LOAMED & SEEDED.

EXISTING WETLAND LIMIT (TYP.)

APPROXIMATE LOCATION OF 100-YEAR FEMA FLOOD LINE (TYP.)

PROPOSED CLEARING LIMITS (AREA 1 CLEARING LIMITS - 0.60± ACRES, 34,904± SF). CLEARING ACTIVITIES TO INCLUDE THE REMOVAL OF ALL TREES. STUMPS SHALL BE LEFT IN PLACE. CLEARED MATERIAL TO BE CHIPPED & STOCKPILED. CLEARED AREA TO BE PLANTED WITH EROSION CONTROL PLANTINGS.

FOR PERMITTING ONLY

100 0 50 100 200

(IN FEET) 1 inch = 100 ft.

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NOTE:

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"BARRETTE FARMS"

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APT FILING NUMBER: CT481111

DRAWN BY: BJP

CHECKED BY: SMC

DATE: 07/11/16

SHEET TITLE:

OVERALL SEDIMENTATION & EROSION CONTROL PLAN

SHEET NUMBER:

EC-0

KEY PLAN

LEGEND:

- LOD — PROPOSED LIMIT OF DISTURBANCE
- SF — SF — PROPOSED STRAW WATTLE
- PROPOSED CLEARING LIMITS/ LIMITS OF DISTURBANCE
- X — X — X — X — PROPOSED CHAIN LINK FENCE
- PROPOSED CONSTRUCTION ENTRANCE
- PROPOSED MATERIAL STOCKPILE
- PROPOSED EROSION CONTROL BLANKET

APPROXIMATE LOCATION OF 100-YEAR FEMA FLOOD LINE (TYP.)

100 WETLAND SETBACK (TYP.)

VERNAL POOL BUFFER ENHANCEMENT AREA

PROPOSED LIMIT OF DISTURBANCE (TYP.) (TOTAL PROJECT DISTURBANCE - 14.14± ACRES 615,960± SF)

PROPOSED STRAW WATTLE (TYP.) 1 / DN-2

1 / DN-2 PROPOSED STRAW WATTLE (TYP.)

3 / DN-2 PROPOSED STOCKPILE AREA WITH DOUBLE ROW SILT FENCE (TYP.)

BUILDING SETBACK LINE(TYP.)

PROPERTY LINE (TYP.)

CONTRACTOR SHALL INSTALL STRAW WATTLE ALONG LIMITS OF CLEARING IMMEDIATELY IF ANY AREA IS DISTURBED OR SHOULD MECHANICAL EQUIPMENT BE USED ALONG THE SLOPE (TYP.)

APPROXIMATE LOCATION OF 100-YEAR FEMA FLOOD LINE (TYP.)

100' WETLAND SETBACK (TYP.)

PROPOSED CLEARING LIMITS (AREA 1 CLEARING LIMITS - 0.80± ACRES, 34,904± SF). CLEARING ACTIVITIES TO INCLUDE THE REMOVAL OF ALL TREES. STUMPS SHALL BE LEFT IN PLACE. CLEARED MATERIAL TO BE CHIPPED & STOCKPILED. CLEARED AREA TO BE PLANTED WITH EROSION CONTROL PLANTINGS.

QUINNATISSET BROOK

BERNARD J. & LUCILLE N/F VOL. 760

EXISTING TREELINE

100' WETLAND SETBACK

MATCHLINE: SEE SHEET EC-2

FOR PERMITTING ONLY

(IN FEET) 1 inch = 40 ft.

C-TECSOLAR
1 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860)-580-7174

ALL-POINTS TECHNOLOGY CORPORATION
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STATE OF CONNECTICUT
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DESIGN PROFESSIONALS OF RECORD

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ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

NOTE:

C-TECSOLAR
"BARRETTE FARMS"

SITE ADDRESS: 1 BALLARD ROAD THOMPSON, CT

APT FILING NUMBER: CT481111

DRAWN BY: BJP

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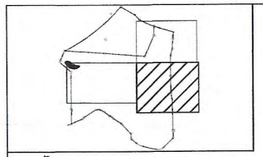
SHEET TITLE:

SEDIMENTATION & EROSION CONTROL PLAN

SHEET NUMBER:

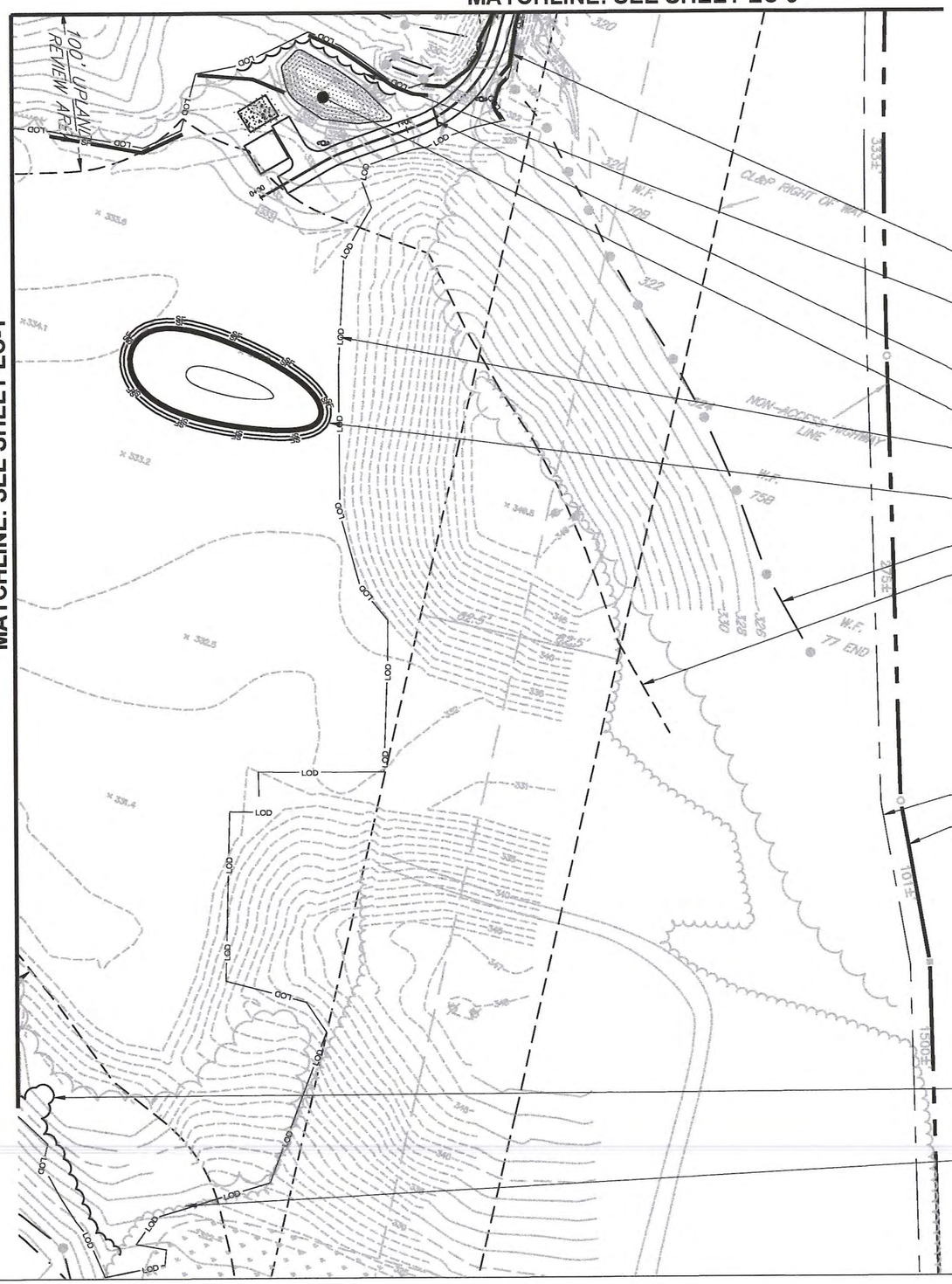
EC-1



KEY PLAN

MATCHLINE: SEE SHEET EC-3

MATCHLINE: SEE SHEET EC-1



LEGEND:

- LOD — PROPOSED LIMIT OF DISTURBANCE
- SF SF — PROPOSED STRAW WATTLE
- PROPOSED CLEARING LIMITS/ LIMITS OF DISTURBANCE
- X X X X — PROPOSED CHAIN LINK FENCE
- PROPOSED CONSTRUCTION ENTRANCE
- PROPOSED MATERIAL STOCKPILE
- PROPOSED EROSION CONTROL BLANKET

1 DN-2 PROPOSED STRAW WATTLE (TYP.)

PROPOSED CLEARING LIMITS (AREA 2 CLEARING LIMITS - 0.03± ACRES 1,368± SF). CLEARING ACTIVITIES TO INCLUDE THE REMOVAL OF ALL BRUSH, TREES, & STUMPS. CLEARED MATERIAL TO BE CHIPPED & STOCKPILED. DISTURBED AREA TO BE LOAMED & SEEDED.

2 DN-3 PROPOSED WATER BAR - PERMANENT (TYP.) (9 TOTAL)

1 DN-3 PROPOSED EROSION CONTROL BLANKET (TYP.)

PROPOSED LIMIT OF DISTURBANCE (TYP.)
(TOTAL PROJECT DISTURBANCE - 14.14± ACRES 615,960± SF)

3 DN-2 PROPOSED STOCKPILE AREA WITH DOUBLE ROW SILT FENCE (TYP.)

WETLAND LIMIT (TYP.)

100' WETLAND SETBACK (TYP.)

PROPOSED CLEARING LIMITS (AREA 1 CLEARING LIMITS - 0.80± ACRES, 34,904± SF). CLEARING ACTIVITIES TO INCLUDE THE REMOVAL OF ALL TREES. STUMPS SHALL BE LEFT IN PLACE. CLEARED MATERIAL TO BE CHIPPED & STOCKPILED. CLEARED AREA TO BE PLANTED WITH EROSION CONTROL PLANTINGS.

CONTRACTOR SHALL INSTALL STRAW WATTLE ALONG LIMITS OF CLEARING IMMEDIATELY IF ANY AREA IS DISTURBED OR SHOULD MECHANICAL EQUIPMENT BE USED ALONG THE SLOPE (TYP.)

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40 0 20 40 80
(IN FEET) 1 inch = 40 ft.

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1 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860)-580-7174

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
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STATE OF CONNECTICUT
BRADLEY J. PARSONS
No. 25025
LICENSED
PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 3 SADDLEBROOK DRIVE
KILLINGWORTH, CT 06419

NOTE:

C-TECSOLAR
"BARRETTE FARMS"

SITE ADDRESS: 1 BALLARD ROAD
THOMPSON, CT

APT FILING NUMBER: CT481111

DRAWN BY: BJP

CHECKED BY: SMC

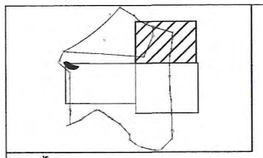
DATE: 07/11/16

SHEET TITLE:

SEDIMENTATION & EROSION CONTROL PLAN

SHEET NUMBER:

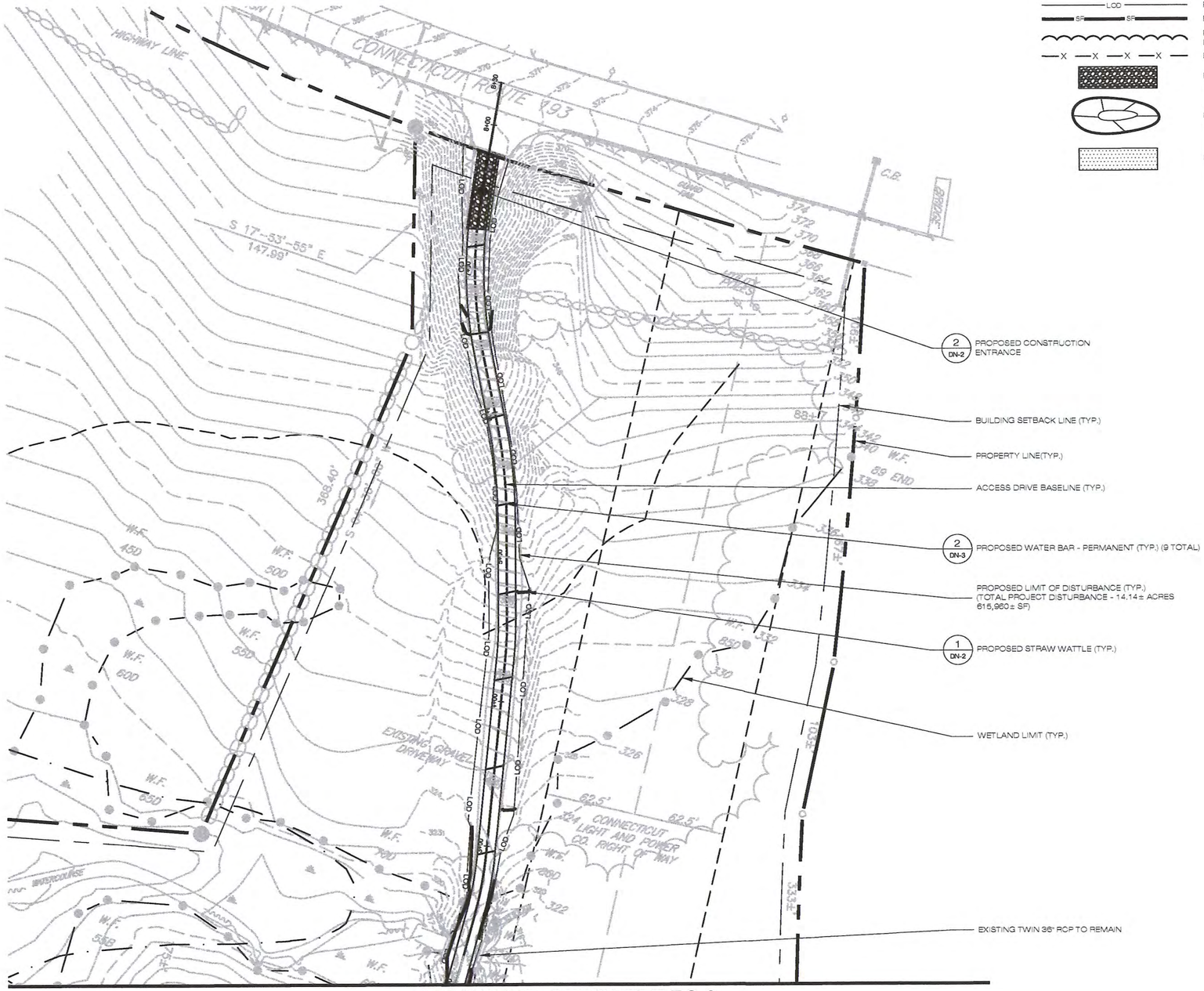
EC-2



KEY PLAN

LEGEND:

- LOD — PROPOSED LIMIT OF DISTURBANCE
- SF — SF — PROPOSED STRAW WATTLE
- PROPOSED CLEARING LIMITS/ LIMITS OF DISTURBANCE
- —X—X—X—X— PROPOSED CHAIN LINK FENCE
- PROPOSED CONSTRUCTION ENTRANCE
- PROPOSED MATERIAL STOCKPILE
- PROPOSED EROSION CONTROL BLANKET



2 / DN-2 — PROPOSED CONSTRUCTION ENTRANCE

BUILDING SETBACK LINE (TYP.)

PROPERTY LINE(TYP.)

ACCESS DRIVE BASELINE (TYP.)

2 / DN-3 — PROPOSED WATER BAR - PERMANENT (TYP.) (9 TOTAL)

PROPOSED LIMIT OF DISTURBANCE (TYP.)
(TOTAL PROJECT DISTURBANCE - 14.14± ACRES
615,960± SF)

1 / DN-2 — PROPOSED STRAW WATTLE (TYP.)

WETLAND LIMIT (TYP.)

EXISTING TWIN 36" RCP TO REMAIN

MATCHLINE: SEE SHEET EC-2

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40 0 20 40 80
(IN FEET) 1 inch = 40 ft.

C-TECSOLAR
1 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
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3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
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NOTE:

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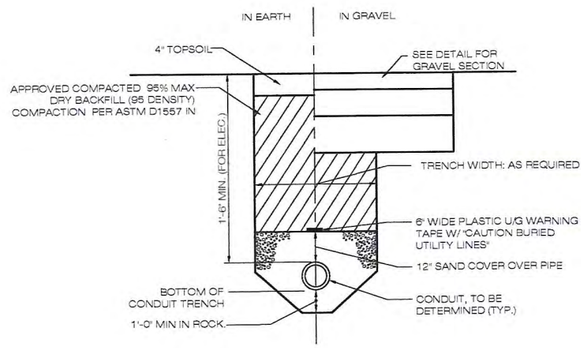
SEDIMENTATION & EROSION CONTROL PLAN

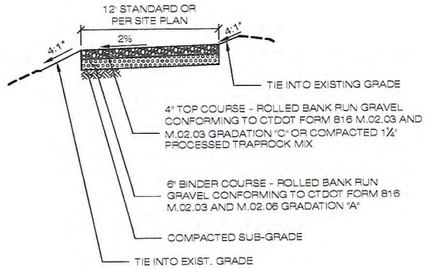
SHEET NUMBER:

EC-3



1 DN-1 ELECTRICAL TRENCH DETAIL

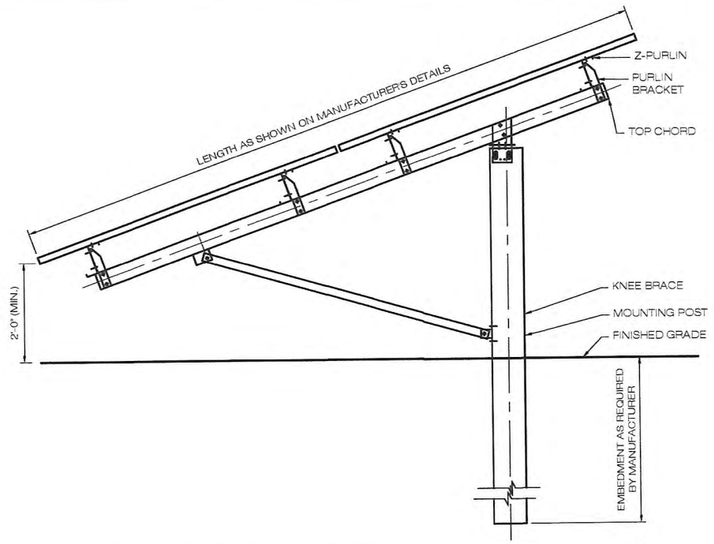
SCALE : N.T.S.



NOTES:
1. SUBBASE MAY CONSIST OF NATIVE MATERIALS IF FOUND ACCEPTABLE BY THE ENGINEER. SUBBASE TO BE COMPACTED TO 95% MAX DRY DENSITY
2. SUBBASE IS TO BE FREE FROM DEBRIS AND UNSUITABLE MATERIALS.
3. THE PREFERRED CUT AND FILL SLOPE IS 4:1, HOWEVER THE ENGINEER OF RECORD MAY REVISE THE CUT SLOPE TO 2:1 OR 1.5:1 IF CUT SLOPE IS ROCK OR WELL CEMENTED SOIL
4. IN AREAS DEEMED ACCEPTABLE BY THE GEOTECHNICAL ENGINEER THE CONTRACTOR SHALL GRADE AND TOP DRESS WITH WITH 2" OF TOP COURSE.

2 DN-1 GRAVEL ACCESS DRIVE (LOOKING UP STATION)

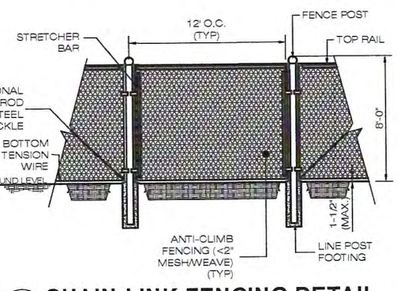
SCALE : N.T.S.



NOTES:
SEE MANUFACTURERS DETAIL SHEETS FOR ADDITIONAL INFORMATION REGARDING RACKING SYSTEM REQUIREMENTS AND INSTALLATION PROCEDURES. RACKING SYSTEM TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.

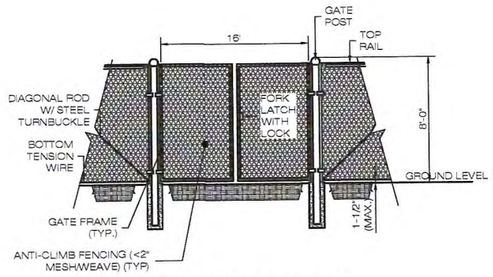
3 DN-1 TYPICAL POST MOUNTED RACKING SYSTEM

SCALE : NTS



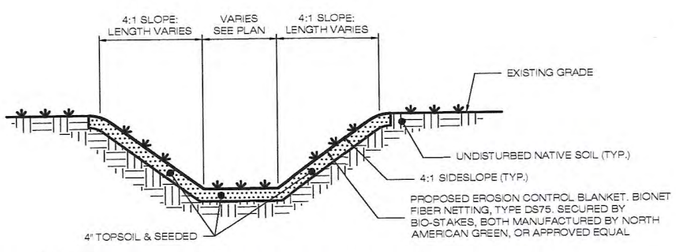
4 DN-1 CHAIN-LINK FENCING DETAIL

SCALE : NTS



5 DN-1 FENCE & GATE DETAIL

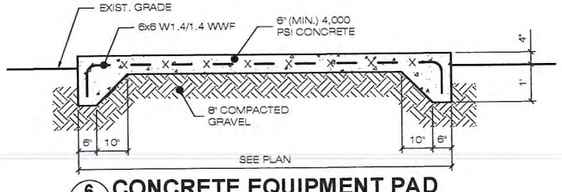
SCALE : N.T.S.



NOTES:
SEED MIX TO BE NEW ENGLAND EROSION CONTROL/ RESTORATION MIX FOR MOIST SIDES ON THE BOTTOM OF THE BASIN AND NEW ENGLAND EROSION/RESTORATION MIX FOR DRY SITES ON THE SIDE SLOPES.

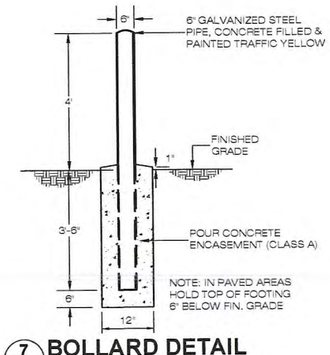
8 DN-1 GRASS LINED INFILTRATION BASIN

SCALE : NTS



6 DN-1 CONCRETE EQUIPMENT PAD

SCALE : ½" = 1'-0"



7 DN-1 BOLLARD DETAIL

SCALE : NTS

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C-TECSOLAR
1 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860)-580-7174

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DETAIL SHEET

SHEET NUMBER:

DN-1

EROSION CONTROL NOTES

EROSION AND SEDIMENT CONTROL PLAN NOTES

1. THE CONTRACTOR SHALL CONSTRUCT ALL SEDIMENT AND EROSION CONTROLS IN ACCORDANCE WITH THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL KEEP A COPY OF THE CURRENT GUIDELINES ON-SITE FOR REFERENCE DURING CONSTRUCTION. ALL SEDIMENTATION AND EROSION CONTROL MEASURES, INCLUDING THE CONSTRUCTION OF TEMPORARY SEDIMENTATION TRAPS/BASINS, TEMPORARY DIVERSION SWALES AND ANTI-TRACKING PADS, SHALL BE INSTALLED PRIOR TO THE START OF CLEARING AND GRUBBING AND DEMOLITION OPERATIONS.

2. THESE DRAWINGS ARE ONLY INTENDED TO DESCRIBE THE SEDIMENT AND EROSION CONTROL MEASURES FOR THIS SITE. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN ARE SHOWN IN A GENERAL SIZE AND LOCATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL EROSION CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO STORM DRAINAGE SYSTEMS AND/OR WATERCOURSES. ACTUAL SITE CONDITIONS OR SEASONAL AND CLIMATIC CONDITIONS MAY WARRANT ADDITIONAL CONTROLS OR CONFIGURATIONS WHEN DIRECTED BY THE ENGINEER. SEE SEDIMENT AND EROSION CONTROL DETAILS AND SUGGESTED CONSTRUCTION SEQUENCE FOR MORE INFORMATION. REFER TO SITE PLAN FOR GENERAL INFORMATION AND OTHER CONTRACT PLANS FOR APPROPRIATE INFORMATION.

3. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING THE SEDIMENT AND EROSION CONTROL PLAN. THIS RESPONSIBILITY INCLUDES THE PROPER INSTALLATION AND MAINTENANCE OF CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED WITH CONSTRUCTION ON THE SITE OF THE REQUIREMENTS AND OBJECTIVES OF THIS PLAN, INFORMING THE GOVERNING AUTHORITY OR INLAND WETLANDS AGENCY OF ANY TRANSFER OF THIS RESPONSIBILITY, AND FOR CONVEYING A COPY OF THE SEDIMENT & EROSION CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED. COMPLY WITH REQUIREMENTS OF CGS SECTION 22A- 430B FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES AND WITH DEEP RECORD KEEPING AND INSPECTION REQUIREMENTS.

4. A BOND MAY BE REQUIRED TO BE POSTED WITH THE GOVERNING AUTHORITY FOR THE EROSION CONTROL INSTALLATION AND MAINTENANCE.

5. THE CONTRACTOR SHALL APPLY THE MINIMUM EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THE PLAN IN CONJUNCTION WITH CONSTRUCTION SEQUENCING, SUCH THAT ALL ACTIVE WORK ZONES ARE PROTECTED. ADDITIONAL AND/OR ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE CONTRACTOR, OWNER, SITE ENGINEER, MUNICIPAL OFFICIALS, OR ANY GOVERNING AGENCY. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROPOSED BY THE CONTRACTOR.

6. THE CONTRACTOR SHALL TAKE EXTREME CARE DURING CONSTRUCTION SO AS NOT TO DISTURB UNPROTECTED WETLAND AREAS OR SEDIMENTATION AND EROSION CONTROL MEASURES. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROLS WEEKLY AND WITHIN 24 HOURS OF A STORM WITH A RAINFALL AMOUNT OF 0.2 INCHES OR GREATER TO VERIFY THAT THE CONTROLS ARE OPERATING PROPERLY AND MAKE REPAIRS WHERE NECESSARY.

7. THE CONTRACTOR SHALL KEEP A SUPPLY OF EROSION CONTROL MATERIAL (HAY BALES, SILT FENCE, JUTE MESH, ETC.) ON-SITE FOR PERIODIC MAINTENANCE AND EMERGENCY REPAIRS.

8. ALL FILL MATERIAL PLACED ADJACENT TO ANY WETLAND AREA SHALL BE GOOD QUALITY, WITH LESS THAN 5% FINES PASSING THROUGH A #200 SIEVE (BANK RUN), SHALL BE PLACED IN MAXIMUM ONE FOOT LIFTS, AND SHALL BE COMPACTED TO 95% MAX. DRY DENSITY MODIFIED PROCTOR OR AS SPECIFIED IN THE CONTRACT SPECIFICATIONS.

9. PROTECT EXISTING TREES THAT ARE TO BE SAVED BY FENCING AT THE DRIP LINE, OR AS DETAILED, WITH SNOW FENCE, ORANGE SAFETY FENCE, OR EQUIVALENT FENCING. ANY LIMB TRIMMING SHOULD BE DONE AFTER CONSULTATION WITH AN ARBORIST AND BEFORE CONSTRUCTION BEGINS IN THAT AREA; FENCING SHALL BE MAINTAINED AND REPAIRED DURING CONSTRUCTION.

10. ANTI-TRACKING PADS SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR CONSTRUCTION ACTIVITY AND SHALL BE MAINTAINED THROUGHOUT THE DURATION OF ALL CONSTRUCTION. THE LOCATION OF THE TRACKING PADS MAY CHANGE AS VARIOUS PHASES OF CONSTRUCTION ARE COMPLETED.

11. ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE, WHICH SHALL BE MARKED WITH SILT FENCE, SAFETY FENCE, HAY BALES, RIBBONS, OR OTHER MEANS PRIOR TO CLEARING. CONSTRUCTION ACTIVITY SHALL REMAIN ON THE UPHILL SIDE OF THE SEDIMENT BARRIER UNLESS WORK IS SPECIFICALLY CALLED FOR ON THE DOWNHILL SIDE OF THE BARRIER. STAKED HAY BALES OR SILT FENCES SHALL ALSO BE INSTALLED AT THE DOWNHILL SIDES OF BUILDING EXCAVATIONS, DEWATERING PUMP DISCHARGES, AND MATERIAL STOCKPILES.

12. INSTALL TEMPORARY DIVERSION DITCHES, PLUNGE POOLS, TEMPORARY SEDIMENT TRAPS/BASINS, AND DEWATERING PITS AS SHOWN AND AS NECESSARY DURING VARIOUS PHASES OF CONSTRUCTION TO CONTROL RUNOFF UNTIL UPHILL AREAS ARE STABILIZED. LOCATION OF TEMPORARY SEDIMENT TRAPS/BASINS WILL REQUIRE REVIEW AND APPROVAL BY THE ENGINEER AND GOVERNING OFFICIAL. DEWATERING SETTLING TRAPS SHALL BE USED IF GROUND WATER IS ENCOUNTERED. NO RUNOFF SHALL BE ALLOWED TO EXIT THE SITE PRIOR TO TREATMENT FOR SEDIMENT REMOVAL.

13. AS GENERAL GRADING OPERATIONS PROGRESS, THE TEMPORARY DIVERSION DITCHES SHALL BE RAISED OR LOWERED AND RELOCATED, AS CUT AND FILL SLOPES DICTATE, TO DIVERT SURFACE RUNOFF TO THE SEDIMENT TRAPS/BASINS.

14. TEMPORARY SEDIMENT TRAPS SHALL PROVIDE 134 CUBIC YARDS OF SEDIMENT STORAGE PER DISTURBED ACRE CONTRIBUTING TO THE TRAP/BASIN. PROVIDE TRAP/BASIN VOLUMES FOR ALL DISTURBANCE ON SITE.

15. PERIODICALLY CHECK ACCUMULATED SEDIMENT LEVELS IN SEDIMENT TRAPS/BASINS DURING CONSTRUCTION AND CLEAN ACCUMULATED SILT WHEN NECESSARY OR WHEN ONE FOOT OF SEDIMENT HAS ACCUMULATED. CLEAN ACCUMULATED SEDIMENT FROM CATCH BASIN SUMPS AS NECESSARY. REMOVE ACCUMULATED SEDIMENT FROM BEHIND HAY BALES AND SILT FENCE. EXCAVATED MATERIAL FROM TEMPORARY SEDIMENT TRAPS/BASINS MUST BE STOCKPILED ON UPHILL SIDE OF SILT FENCE.

16. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING. ALL EARTH STOCKPILES SHALL HAVE HAY BALES OR SILT FENCE AROUND THE LIMIT OF PILE. PILES SHALL BE TEMPORARILY SEEDED IF PILE IS TO REMAIN IN PLACE AND UNDISTURBED FOR MORE THAN 30 DAYS.

17. NO CUT OR FILL SLOPES SHALL EXCEED 2:1 EXCEPT WHERE STABILIZED BY ROCK FACED EMBANKMENTS OR EROSION CONTROL BLANKETS, JUTE MESH AND VEGETATION. ALL SLOPES SHALL BE SEEDED, AND THE ROAD SHOULDER AND BANKS WILL BE STABILIZED IMMEDIATELY UPON COMPLETION OF FINAL GRADING UNTIL TURF IS ESTABLISHED.

18. DIRECT ALL DEWATERING PUMP DISCHARGE TO A SEDIMENT CONTROL DEVICE SUCH AS TEMPORARY SEDIMENT TRAPS OR GRASS FILTERS WITHIN THE APPROVED LIMIT OF DISTURBANCE. DISCHARGE TO STORM DRAINS OR SURFACE WATERS FROM SEDIMENT CONTROLS SHALL BE CLEAR AND APPROVED BY THE ENGINEER.

19. BLOCK THE OPEN UPSTREAM ENDS OF DETENTION BASIN/SEDIMENT TRAP OUTLET CONTROL ORIFICES UNTIL SITE IS STABILIZED AND BLOCK END OF STORM DRAINS IN EXPOSED TRENCHES WITH BOARDS AND SANDBAGS AT THE END OF EACH WORKING DAY WHEN RAIN IS EXPECTED.

20. THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS ON THE SITE. PROPER SANITARY DEVICES SHALL BE MAINTAINED ON-SITE AT ALL TIMES. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS ON THE CONSTRUCTION SITE AND SHALL ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION AND RESPONSE/CONTAINMENT.

21. MINIMIZE LAND DISTURBANCES. SEED AND MULCH DISTURBED AREAS WITH TEMPORARY MIX AS SOON AS PRACTICABLE (2 WEEK MAXIMUM UNSTABILIZED PERIOD) USING PERENNIAL RYEGRASS AT 40 LBS PER ACRE. MULCH ALL CUT AND FILL SLOPES AND SWALES WITH LOOSE HAY AT A RATE OF 2 TONS PER ACRE. IF NECESSARY, REPLACE LOOSE HAY ON SLOPES WITH EROSION CONTROL BLANKETS OR JUTE CLOTH. MODERATELY GRADED AREAS, ISLANDS, AND TEMPORARY CONSTRUCTION STAGING AREAS MAY BE HYDROSEEDED WITH TACKIFIER.

22. SWEEP AFFECTED PORTIONS OF OFF SITE ROADS ONE OR MORE TIMES A DAY (OR LESS FREQUENTLY IF TRACKING IS NOT A PROBLEM) DURING CONSTRUCTION. FOR DUST CONTROL, PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVELWAYS TO KEEP THE TRAVELWAYS DAMP. CALCIUM CHLORIDE MAY ALSO BE APPLIED TO ACCESS ROADS. DUMP TRUCK LOADS EXITING THE SITE SHALL BE COVERED.

23. TURF ESTABLISHMENT SHALL BE PERFORMED OVER ALL DISTURBED SOIL, UNLESS THE AREA IS UNDER ACTIVE CONSTRUCTION, IT IS COVERED IN STONE OR SCHEDULED FOR PAVING WITHIN 30 DAYS. TEMPORARY SEEDING OR NON-LIVING SOIL PROTECTION OF ALL EXPOSED SOILS AND SLOPES SHALL BE INITIATED WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK IN AREAS TO BE LEFT LONGER THAN 30 DAYS.

24. TWO WEEKS BEFORE THE FALL SEEDING SEASON BEGINS (AUGUST 15 TO OCTOBER 15), THE CONTRACTOR SHALL SCHEDULE A MEETING WITH THE ENGINEER STAFF TO DISCUSS STABILIZING THE SITE FOR WINTER MONTHS. MEASURES SUCH AS MULCHING AND/OR SEEDING MAY BE REQUIRED.

25. MAINTAIN ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK SWEEP PARKING LOTS, CLEAN THE STORM DRAINAGE SYSTEMS AND REMOVE ALL TEMPORARY SEDIMENT CONTROLS ONCE THE SITE IS FULLY STABILIZED AND APPROVAL HAS BEEN RECEIVED FROM TOWN OF THOMPSON AND/OR ENGINEER.

SEDIMENT & EROSION CONTROL NARRATIVE

1. THE PROJECT INCLUDES THE CLEARING OF APPROXIMATELY 0.83 ACRES OF EXISTING WOODLAND AREA FOR THE INSTALLATION OF A GROUND MOUNTED SOLAR PANEL FACILITY WITH ASSOCIATED EQUIPMENT. THE CLEARED AREA ON THE SOUTH SIDE OF THE SITE WILL BE PLANTED WITH EROSION CONTROL PLANTINGS.

   THE PROPOSED PROJECT INVOLVES THE FOLLOWING CONSTRUCTION:
   A. CONSTRUCTION OF 11,200 GROUND MOUNTED SOLAR PANELS AND ASSOCIATED EQUIPMENT.
   B. CONSTRUCTION OF GRAVEL ACCESS DRIVES.
   C. CONSTRUCTION OF SHALLOW INFILTRATION BASIN TO COLLECT STORMWATER RUNOFF.
   D. CONSTRUCTION OF A CHAIN LINK GATE.
   E. THE STABILIZATION OF PERVIOUS DISTURBED AREAS WITH PERMANENT GRASS AND LANDSCAPING TREATMENTS.

2. FOR THIS PROJECT, THERE ARE APPROXIMATELY 14.14 ACRES OF THE SITE BEING DISTURBED AND THE IMPERVIOUS AREA OF THE SITE HAS BEEN INCREASED BY A TOTAL OF 0.201 ACRES.

3. THE PROJECT SITE, AS MAPPED IN THE SOIL SURVEY OF STATE OF CONNECTICUT (VERSION 14, 2015), CONTAINS TYPE A AND TYPE B SOILS. A GEOTECHNICAL ENGINEERING REPORT HAS NOT BEEN COMPLETED FOR THIS PROJECT.

4. THE PROJECT AREA WAS FOUND TO CONTAIN TWO WETLAND AREAS CONSISTING OF TWO RIPARIAN CORRIDORS ASSOCIATED WITH LITTLE MOUNTAIN BROOK AND QUINNATISSAT BROOK.

5. IT WILL BE IMPORTANT THAT THE EXISTING WETLAND RESOURCE AREAS BE PROTECTED DURING AND AFTER CONSTRUCTION FROM SEDIMENTATION AND POLLUTANTS TO THE EXTENT POSSIBLE. CUT AND FILL SLOPES WILL NEED TO BE STABILIZED BY VEGETATION, RIPRAP OR EROSION CONTROL GEOTEXTILES AS SOON AS POSSIBLE TO MINIMIZE SLOPE EROSION. ALL CUT AND FILL SLOPES 3:1 OR LESS WILL BE SEEDED, FERTILIZED AND MULCHED FOR TEMPORARY AND PERMANENT STABILIZATION. TOPSOIL AND EXCAVATED MATERIAL STOCKPILE AREAS MUST BE CONTAINED BY SILT FENCE AND HAY BALES AND STABILIZED BY VEGETATION IF LEFT UNDISTURBED FOR MORE THAN 30 DAYS. DEWATERING WASTEWATER FROM TRENCHING OPERATIONS SHALL BE ADDRESSED DURING CONSTRUCTION. ALL WATER FROM DEWATERING OPERATIONS SHALL BE DIRECTED TO DEWATERING PUMP SETTLING BASINS. CONSTRUCTION NEAR WETLANDS SHALL BE ISOLATED BY USE OF CONSTRUCTION FENCING OR A COFFERDAM AND THE TEMPORARY DISTURBED AREA SHALL BE KEPT TO A MINIMUM. WORK IN HIGH GROUNDWATER AREAS SHALL BE SCHEDULED, WHEN POSSIBLE, SO IT CAN BE COMPLETED IN A DRY PERIOD AND IN THE SHORTEST TIME POSSIBLE.

6. IT IS ANTICIPATED THAT CONSTRUCTION WILL BEGIN IN OCTOBER OF 2016 AND WILL BE COMPLETED IN APPROXIMATELY 8 MONTHS.

7. REFER TO THE CONSTRUCTION SEQUENCING AND EROSION AND SEDIMENTATION NOTES FOR INFORMATION REGARDING SEQUENCING OF MAJOR OPERATIONS IN THE ON-SITE CONSTRUCTION PHASES.

8. STORMWATER MANAGEMENT DESIGN CRITERIA UTILIZES THE APPLICABLE SECTIONS OF THE 2004 CONNECTICUT STORMWATER QUALITY MANUAL TO THE EXTENT POSSIBLE AND PRACTICABLE FOR THIS PROJECT ON THIS SITE. EROSION AND SEDIMENTATION MEASURES ARE BASED UPON ENGINEERING PRACTICE, JUDGEMENT AND THE APPLICABLE SECTIONS OF THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.

9. DETAILS FOR THE TYPICAL STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION MEASURES ARE SHOWN ON PLAN SHEET DN-1 AND DN-2, OR PROVIDED AS SEPARATE SUPPORT DOCUMENTATION FOR REVIEW IN THIS PLAN.

10. CONSERVATION PRACTICES TO BE USED DURING CONSTRUCTION AREA:
    A. STAGED CONSTRUCTION;
    B. MINIMIZE THE DISTURBED AREAS DURING CONSTRUCTION;
    C. STABILIZE DISTURBED AREAS AS SOON AS POSSIBLE WITH TEMPORARY OR PERMANENT MEASURES;
    D. MINIMIZE IMPERVIOUS AREAS;
    E. UTILIZE APPROPRIATE CONSTRUCTION EROSION AND SEDIMENTATION MEASURES.

11. THE FOLLOWING SEPARATE DOCUMENTS ARE TO BE CONSIDERED A PART OF THE EROSION AND SEDIMENTATION PLAN:
    A. STORMWATER MANAGEMENT REPORT FOR EXISTING AND PROPOSED PEAK FLOWS.
    B. DESIGN CALCULATIONS FOR TEMPORARY SEDIMENT TRAPS DURING PHASED CONSTRUCTION.
    C. DESIGN CALCULATIONS FOR STORMWATER QUALITY.

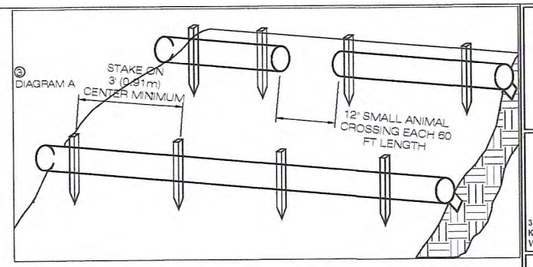
SUGGESTED CONSTRUCTION SEQUENCE

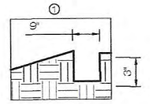
THE FOLLOWING SUGGESTED SEQUENCE OF CONSTRUCTION ACTIVITIES IS PROJECTED BASED UPON ENGINEERING JUDGEMENT AND BEST MANAGEMENT PRACTICES. THE CONTRACTOR MAY ELECT TO ALTER THE SEQUENCING TO BEST MEET THE CONSTRUCTION SCHEDULE, THE EXISTING SITE ACTIVITIES AND WEATHER CONDITIONS.

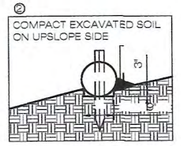
1. CONTACT THE ENGINEER TO SCHEDULE A PRE-CONSTRUCTION MEETING. PHYSICALLY FLAG THE LIMITS OF CLEARING IN THE FIELD AS NECESSARY TO FACILITATE THE PRE-CONSTRUCTION MEETING.
2. CONDUCT A PRE-CONSTRUCTION MEETING TO DISCUSS THE PROPOSED WORK AND EROSION AND SEDIMENTATION CONTROL MEASURES. THE MEETING SHOULD BE ATTENDED BY THE OWNER, THE OWNER REPRESENTATIVE(S), THE GENERAL CONTRACTOR, DESIGNATED SUB-CONTRACTORS AND THE PERSON, OR PERSONS, RESPONSIBLE FOR THE IMPLEMENTATION, OPERATION, MONITORING AND MAINTENANCE OF THE EROSION AND SEDIMENTATION MEASURES. THE CONSTRUCTION PROCEDURES FOR THE ENTIRE PROJECT SHALL BE REVIEWED AT THIS MEETING.
3. NOTIFY THE ENGINEER AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO COMMENCEMENT OF ANY DEMOLITION, CONSTRUCTION OR REGULATED ACTIVITY ON THIS PROJECT. NOTIFY CALL BEFORE YOU DIG AT 1-800-922-4455.
4. REMOVE EXISTING IMPROVEMENTS AS NECESSARY AND PROVIDE MINIMAL CLEARING AND GRUBBING TO INSTALL THE REQUIRED CONSTRUCTION ENTRANCES.
5. CLEAR AND GRUB AS REQUIRED, TO INSTALL THE EROSION AND SEDIMENTATION CONTROL MEASURES AND, IF APPLICABLE, TREE PROTECTION.
6. INSTALL INFILTRATION BASINS AS SHOWN ON THE GRADING AND DRAINAGE PLAN.
7. PERFORM THE REMAINING CLEARING AND GRUBBING AS NECESSARY. REMOVE CUT WOOD AND STUMPS. CHIP BRUSH AND SLASH AND STOCKPILE FOR FUTURE USE OR REMOVE OFF-SITE. REMOVE AND DISPOSE OF DEMOLITION DEBRIS OFF-SITE.
8. REMOVE AND STOCKPILE TOPSOIL TO ITS DESIGNATED AREA AS REQUIRED FOR CONSTRUCTION OF GRAVEL DRIVES, CONCRETE PADS AND INFILTRATION BASINS. PROVIDE EROSION AND SEDIMENTATION CONTROL MEASURES AROUND THE STOCKPILE. TEMPORARILY SEED THE STOCKPILE WHEN STOCKPILING IS COMPLETED OR IF IT WILL NOT BE DISTURBED FOR THIRTY (30) DAYS OR MORE.
9. TEMPORARILY SEED DISTURBED AREAS NOT UNDER CONSTRUCTION FOR THIRTY (30) DAYS OR MORE.
10. INSTALL ELECTRICAL CONDUIT.
11. EXCAVATE AND ROUGH GRADE GRAVEL ACCESS DRIVES AND CONCRETE EQUIPMENT PADS.
12. INSTALL FINAL GRAVEL COURSE ON ALL GRAVEL ACCESS DRIVES.
13. INSTALL GROUND MOUNTED SOLAR PANELS.
14. INSTALL PERIMETER CHAIN LINK FENCE.
15. AFTER SUBSTANTIAL COMPLETION OF THE INSTALLATION OF THE SOLAR PANELS, COMPLETE REMAINING SITE WORK AND STABILIZE ALL DISTURBED AREAS.
16. FINE GRADE, RAKE, SEED AND MULCH ALL REMAINING DISTURBED AREAS.
17. AFTER THE SITE IS STABILIZED AND WITH THE APPROVAL OF THE ENGINEER, REMOVE PERIMETER EROSION AND SEDIMENTATION CONTROLS.

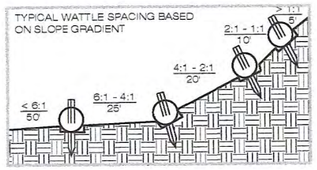
CONSTRUCTION OPERATION AND MAINTENANCE PLAN - BY CONTRACTOR

E&S MEASURE	INSPECTION SCHEDULE	MAINTENANCE REQUIRED
CONSTRUCTION ENTRANCE	DAILY	PLACE ADDITIONAL STONE, EXTEND THE LENGTH OR REMOVE AND REPLACE THE STONE. CLEAN PAVED SURFACES OF TRACKED SEDIMENT.
HAY BALES	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"	REPAIR/REPLACE WHEN FAILURE, OR OBSERVED DETERIORATION, IS OBSERVED. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE BALE.
SILT FENCE	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"	REPAIR/REPLACE WHEN FAILURE, OR OBSERVED DETERIORATION, IS OBSERVED. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE FENCE.
TOPSOIL/BORROW STOCKPILES	DAILY	REPAIR/REPLACE SEDIMENT BARRIERS AS NECESSARY.
WATER BARS	DAILY	REPAIR/RESHAPE AS NECESSARY. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE WATER BAR.
TEMPORARY DIVERSION DITCHES	DAILY & WITHIN 24 HOURS OF RAINFALL > 0.2"	REPAIR/RESHAPE AS NECESSARY. REVIEW CONDITIONS IF REPETITIVE FAILURES OCCUR.
TEMPORARY SEDIMENT TRAPS/BASINS	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"	REMOVE SEDIMENT WHEN IT REACHES 1/2 OF THE MINIMUM REQUIRED WET STORAGE VOLUME.
TEMPORARY SOIL PROTECTION	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"	REPAIR ERODED OR BARE AREAS IMMEDIATELY. RESEED AND MULCH.





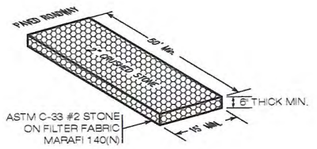




1. BEGIN AT THE LOCATION WHERE THE WATTLE IS TO BE INSTALLED BY EXCAVATING A 2-3" (5-7.5 CM) DEEP X 9" (22.9 CM) WIDE TRENCH ALONG THE CONTOUR OF THE SLOPE. EXCAVATED SOIL SHOULD BE PLACED UPSLOPE FROM THE ANCHOR TRENCH.
2. PLACE THE WATTLE IN THE TRENCH SO THAT IT CONTOURS TO THE SOIL SURFACE. COMPACT SOIL FROM THE EXCAVATED TRENCH AGAINST THE WATTLE ON THE UPHILL SIDE. WATTLES SHALL BE INSTALLED IN 60 FT CONTINUOUS LENGTHS WITH ADJACENT WATTLES TIGHTLY ABUT. EVERY 60 FT THE WATTLE ROW SHALL BE SPACED 12 INCHES CLEAR, END TO END, FOR AMPHIBIAN AND REPTILE TRAVEL. THE OPEN SPACES SHALL BE STAGGERED MID LENGTH OF THE NEXT DOWN GRADIENT WATTLE.
3. SECURE THE WATTLE WITH 18-24" (45.7-61 CM) STAKES EVERY 3-4' (0.9 -1.2 M) AND WITH A STAKE ON EACH END. STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE WATTLE LEAVING AT LEAST 2-3" (5-7.5 CM) OF STAKE EXTENDING ABOVE THE WATTLE. STAKES SHOULD BE DRIVEN PERPENDICULAR TO THE SLOPE FACE.

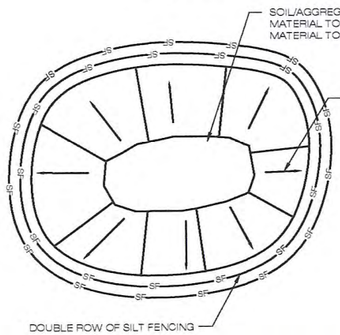
STRAW WATTLE SEDIMENTATION CONTROL BARRIER

1 DN-2 SCALE : NTS



CONSTRUCTION ENTRANCE DETAIL

2 DN-2 SCALE : NTS



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.
4. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

MATERIALS STOCKPILE DETAIL

3 DN-2 SCALE : NTS

FOR PERMITTING ONLY

C-TECSOLAR
1 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860)-580-7174

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

NO	DATE	REVISION
0	07/11/16	CSC SUBMISSION
1		
2		
3		
4		
5		
6		

STATE OF CONNECTICUT
BRADLEY J. PARSONS
No. 26025
LICENSED PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

NOTE:

C-TECSOLAR "BARRETTE FARMS"

SITE 1 BALLARD ROAD
ADDRESS: THOMPSON, CT

APT FILING NUMBER: CT481111

DRAWN BY: BJP

CHECKED BY: SMC

DATE: 07/11/16

SHEET TITLE:
SEDIMENTATION & EROSION CONTROL NOTES & DETAIL SHEET

SHEET NUMBER:
DN-2

SITE PLAN NOTES

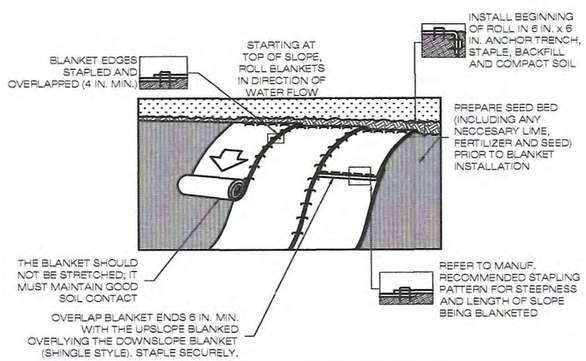
1. ALL CONSTRUCTION SHALL COMPLY WITH C-TEC SOLAR STANDARDS, CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS IN THE ABOVE REFERENCED INCREASING HIERARCHY. IF SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.
2. THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY ZONING PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL TOWN OF THOMPSON CONSTRUCTION PERMITS, INCLUDING CONNECTICUT DOT PERMITS. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
3. REFER TO PLANS, DETAILS AND REPORTS PREPARED BY ALL-POINTS TECHNOLOGY CORPORATION FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE ENGINEER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO BIDDING/CONSTRUCTION. ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONFIRMED WITH THE OWNER'S CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.
4. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS, MATERIALS PER PLANS AND SPECIFICATIONS TO THE OWNER AND ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
5. THE CONTRACTOR SHALL FOLLOW THE RECOMMENDED SEQUENCE OF CONSTRUCTION NOTES PROVIDED ON THE EROSION CONTROL PLAN OR SUBMIT AN ALTERNATE PLAN FOR APPROVAL BY THE ENGINEER PRIOR TO CONSTRUCTION.
6. SHOULD ANY UNKNOWN OR INCORRECTLY LOCATED EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE CIVIL ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.
7. DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE OWNER OR OTHERS DURING OCCUPIED HOURS, EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE OWNER AND THE LOCAL MUNICIPALITY. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
8. THE CONTRACT LIMIT IS THE PROPERTY LINE UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE CONTRACT DRAWINGS.
9. THE CONTRACTOR SHALL ABIDE BY ALL OSHA, FEDERAL, STATE AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.
10. THE CONTRACTOR SHALL RESTORE ANY DRAINAGE STRUCTURE, PIPE, CONDUIT, PAVEMENT, CURBING, SIDEWALKS, LANDSCAPED AREAS OR SIGNAGE DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE ENGINEER.
11. THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.
12. THE ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ENGINEER HAS NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OF PERSONNEL OR TO SUPERVISE SAFETY AND DO NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
13. THE CONTRACTOR SHALL COMPLY WITH OSHA CFR 29 PART 1926 FOR EXCAVATION TRENCHING AND TRENCH PROTECTION REQUIREMENTS.
14. EXISTING TOPOGRAPHY IS BASED ON THE DRAWING TITLED **"1 OF 1"** SCALE: 1"=60', DATED 06-09-16 BY "MARTIN SURVEYING ASSOCIATES, LLC" **AND THE DRAWING BY MESSIER & ASSOCIATES, INC., DATED 02/15.**
15. ALTERNATIVE METHODS AND PRODUCTS, OTHER THAN THOSE SPECIFIED, MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER, ENGINEER, AND APPROPRIATE REGULATORY AGENCY PRIOR TO INSTALLATION DURING THE BIDDING/CONSTRUCTION PROCESS.
16. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" 72 HOURS BEFORE COMMENCEMENT OF WORK AT "1-800-922-4455" AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS.
17. THESE PLANS ARE FOR PERMITTING PURPOSES ONLY AND ARE NOT TO BE UTILIZED FOR CONSTRUCTION.
18. NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLANS IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.
19. A PORTION OF THE NORTHERN AND SOUTHERN PORTION OF THE EXISTING PROPERTY IS LOCATED WITHIN A FEMA DESIGNATED FLOOD HAZARD AREA HOWEVER THE PROJECT AREA IS NOT LOCATED WITHIN A FEMA DESIGNATED FLOOD HAZARD AREA.
20. THERE ARE WETLANDS LOCATED ON THE SITE AS INDICATED ON THE PLANS. WELTAND BOUNDARIES WERE REVIEWED AND CONFIRMED BY ALL-POINTS TECHNOLOGY LICENSED SENIOR WETLANDS SCIENTIST.

GRADING AND DRAINAGE NOTES

1. THIS GRADING AND DRAINAGE DRAWINGS ARE INTENDED TO DESCRIBE GRADING AND DRAINAGE ONLY. REFER TO SITE PLAN FOR GENERAL INFORMATION, AND DETAIL SHEETS FOR DETAILS.
2. THE CONTRACTOR SHALL PRESERVE EXISTING VEGETATION WHERE POSSIBLE AND/OR AS NOTED ON THE DRAWINGS. REFER TO EROSION CONTROL PLAN FOR LIMIT OF DISTURBANCE AND EROSION CONTROL NOTES.
3. TOPSOIL FROM EXCAVATED AREAS SHALL BE STRIPPED AND STOCKPILED ON SITE FOR USE IN FINAL LANDSCAPING.
4. VERTICAL DATUM IS NGV DATUM 88.
5. CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD AND APPROVED BY THE TOWN OF THOMPSON AGENT PRIOR TO THE START OF WORK ON THE SITE.
6. PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS WITHIN THIS PARCEL SO AS TO PREVENT THE SILTING OF ANY WATERCOURSE OR WETLANDS IN ACCORDANCE WITH THE REGULATIONS 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT POLLUTION CONTROL MANUAL. IN ADDITION, THE CONTRACTOR SHALL STRICTLY ADHERE TO THE "EROSION CONTROL PLAN" CONTAINED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO POST ALL BONDS AS REQUIRED BY THE LOCAL MUNICIPALITIES WHICH WOULD GUARANTEE THE PROPER IMPLEMENTATION OF THE PLAN.
7. ALL SITE WORK, MATERIALS OF CONSTRUCTION, AND CONSTRUCTION METHODS FOR EARTHWORK AND STORM DRAINAGE WORK, SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AND APPLICABLE SECTIONS OF THE PROJECT SPECIFICATIONS MANUAL. OTHERWISE THIS WORK SHALL CONFORM TO THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION AND PROJECT GEOTECHNICAL REPORT IF THERE IS NO PROJECT SPECIFICATIONS MANUAL. ALL FILL MATERIAL UNDER STRUCTURES AND PAVED AREAS SHALL BE PER THE ABOVE STATED APPLICABLE SPECIFICATIONS, AND/OR PROJECT GEOTECHNICAL REPORT, AND SHALL BE PLACED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER. MATERIAL SHALL BE COMPACTED IN 6" LIFTS FOR ALL TRAVEL WAYS AND AS APPROPRIATE ELSEWHERE TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557 AT 95% PERCENT OF OPTIMUM MOISTURE CONTENT.
8. ALL DISTURBANCE INCURRED TO PUBLIC, MUNICIPAL, COUNTY, STATE PROPERTY DUE TO CONSTRUCTION SHALL BE RESTORED TO ITS PREVIOUS CONDITION OR BETTER, TO THE SATISFACTION OF THE TOWN OF THOMPSON AND STATE OF CONNECTICUT.
9. IF IMPACTED OR CONTAMINATED SOIL IS ENCOUNTERED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUSPEND EXCAVATION WORK OF IMPACTED SOIL AND NOTIFY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT PRIOR TO PROCEEDING WITH FURTHER WORK IN THE IMPACTED SOIL LOCATION UNTIL FURTHER INSTRUCTED BY THE OWNER AND/OR OWNERS ENVIRONMENTAL CONSULTANT.

UTILITIES NOTES

1. CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE TOWN OF THOMPSON TO SECURE CONSTRUCTION PERMITS AND FOR PAYMENT OF FEES FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES.
2. THIS PLAN DETAILS SITE INSTALLED PIPES UP TO 5' FROM THE BUILDING FACE. REFER TO DRAWINGS BY ELECTRICAL ENGINEER FOR TIE-IN CONNECTION TO EXISTING ELECTRICAL GRID. SITE CONTRACTOR SHALL SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY AT BUILDING CONNECTION POINT OR AT EXISTING UTILITY OR PIPE CONNECTION POINT.
3. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE PROPOSED SANITARY SEWERS AND WHERE PROPOSED STORM PIPING WILL CROSS EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE ENGINEER IN THE EVENT OF ANY DISCOVERED OR UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROPOSED SANITARY SEWERS, STORM PIPING AND UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
4. UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY PROVIDER AND GOVERNING AUTHORITY STAFF REVIEW.
5. THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY PROVIDERS AND GOVERNING AUTHORITY STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY PROVIDER.
6. THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY PROVIDERS FOR SERVICE INSTALLATIONS AND CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY PROVIDERS AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTIONS, RELOCATIONS, INSPECTIONS, AND DEMOLITION UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATIONS MANUAL AND/OR GENERAL CONDITIONS OF THE CONTRACT.
7. ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT. AFTER UTILITY INSTALLATION IS COMPLETED, THE CONTRACTOR SHALL INSTALL TEMPORARY AND/OR PERMANENT PAVEMENT REPAIR AS DETAILED ON THE DRAWINGS OR AS REQUIRED BY THE OWNER HAVING JURISDICTION.
8. ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.
9. RELOCATION OF UTILITY PROVIDER FACILITIES, SUCH AS POLES, SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY PROVIDER.
10. THE CONTRACTOR SHALL COMPACT PIPE BACKFILL IN 6" LIFTS ACCORDING TO THE PIPE BEDDING DETAILS. TRENCH BOTTOM SHALL BE STABLE IN HIGH GROUNDWATER AREAS. A PIPE FOUNDATION SHALL BE USED PER THE TRENCH DETAILS AND IN AREAS OF ROCK EXCAVATION.
11. CONTRACTOR TO PROVIDE STEEL SLEEVES AND ANNULAR SPACE SAND FILL FOR UTILITY PIPE AND CONDUIT CONNECTIONS UNDER FOOTINGS.
12. BUILDING UTILITY PENETRATIONS AND LOCATIONS ARE SHOWN FOR THE CONTRACTOR'S INFORMATION AND SHALL BE VERIFIED WITH THE BUILDING MEP DRAWINGS AND WITH THE OWNER'S CONSTRUCTION MANAGER.
13. ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION FOR APPROVAL PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE APPROPRIATE UTILITY PROVIDER REQUIREMENTS.
14. A ONE-FOOT MINIMUM VERTICAL CLEARANCE BETWEEN WATER, GAS, ELECTRICAL, AND TELEPHONE LINES AND STORM PIPING SHALL BE PROVIDED. A SIX-INCH MINIMUM CLEARANCE SHALL BE MAINTAINED BETWEEN STORM PIPING AND SANITARY SEWER. A 6-INCH TO 18-INCH VERTICAL CLEARANCE BETWEEN SANITARY SEWER PIPING AND STORM PIPING SHALL REQUIRE CONCRETE ENCASEMENT OF THE PROPOSED SANITARY PIPING.
15. SITE CONTRACTOR SHALL PROVIDE ALL BENDS, FITTINGS, ADAPTERS, ETC., AS REQUIRED FOR PIPE CONNECTIONS TO BUILDING STUB OUTS, INCLUDING ROOF/FOOTING DRAIN CONNECTIONS TO ROOF LEADERS AND TO STORM DRAINAGE SYSTEM.
16. THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPE, CONDUIT, PAVEMENT, CURBING, SIDEWALKS, DRAINAGE STRUCTURE, SWALE OR LANDSCAPED AREAS DISTURBED DURING CONSTRUCTION, TO THEIR ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE OWNER AND TOWN OF THOMPSON.
17. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY, AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE INCLUDING SERVICES. CONTACT "CALL BEFORE YOU DIG" AT (800) 922-4455 72 HOURS PRIOR TO CONSTRUCTION AND VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY AND STORM DRAINAGE LOCATIONS. THE CONTRACTOR SHALL EMPLOY THE USE OF A UTILITY LOCATING COMPANY TO PROVIDE SUBSURFACE UTILITY ENGINEERING CONSISTING OF DESIGNATING UTILITIES AND STORM PIPING ON PRIVATE PROPERTY WITHIN THE CONTRACT LIMIT AND CONSISTING OF DESIGNATING AND LOCATING WHERE PROPOSED UTILITIES AND STORM PIPING CROSS EXISTING UTILITIES AND STORM PIPING WITHIN THE CONTRACT LIMITS.
18. THE CONTRACTOR SHALL ARRANGE AND COORDINATE WITH UTILITY PROVIDERS FOR WORK TO BE PERFORMED BY UTILITY PROVIDERS. THE CONTRACTOR SHALL PAY ALL UTILITY FEES UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATION MANUAL AND GENERAL CONDITIONS, AND REPAIR PAVEMENTS AS NECESSARY.
19. ELECTRIC SERVICE SHALL BE INSTALLED OVERHEAD, THE CONTRACTOR SHALL COORDINATE THIS WORK DIRECTLY WITH THE UTILITY COMPANY.
20. ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER, ENGINEER, AND APPROPRIATE REGULATORY AGENCIES PRIOR TO INSTALLATION.
21. THE CONTRACTOR SHALL MAINTAIN ALL FLOWS AND UTILITY CONNECTIONS TO EXISTING BUILDINGS WITHOUT INTERRUPTION UNLESS/UNTIL AUTHORIZED TO DISCONNECT BY THE OWNERS, THE CIVIL ENGINEER, UTILITY PROVIDERS AND GOVERNING AUTHORITIES.



SEQUENCE OF CONSTRUCTION

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPS), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPS IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECPS EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECPS WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL AND FOLD THE REMAINING 12" PORTION OF RECPS BACK OVER THE SEED AND COMPACTED SOIL. SECURE RECPS OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECPS.
3. ROLL THE RECPS DOWN HORIZONTALLY ACROSS THE SLOPE. RECPS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL RECPS MUST BE STAPLED WITH APPROXIMATELY 2" - 5" OVERLAP DEPENDING ON THE RECPS TYPE.
5. CONSECUTIVE RECPS SPLICED DOWN THE SLOPE MUST BE END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECPS WIDTH.

NOTES:

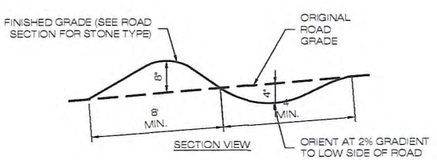
1. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
2. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
3. BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
4. THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
5. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

AMERICAN TOWER MASTER SPECIFICATION:

1. DIVISION 31 EARTHWORK SECTION 0312500 FOR EROSION AND SEDIMENT CONTROLS

1 DN-3 EROSION CONTROL BLANKET STEEP SLOPES

SCALE : N.T.S.



NOTES:

1. SHALL BE ORIENTATED AT A 10 DEGREE ANGLE DOWNGRADE.
2. RIP-RAP OUTFALL SHALL BE INSTALLED AT OUTFALL TO AVOID WASHOUT.
3. WATER BARS SHALL MAINTAIN A MINIMUM OF 6" STONE IN ALL AREAS.
2. WATERBARS SHALL DISCHARGE TO A STABLE AREA OR HAVE A RIP-RAP OUTFALL SHALL BE INSTALLED TO AVOID WASHOUT.
3. DAMAGED OR ERODED WATERBARS SHALL BE RESTORED TO ORIGINAL DIMENSIONS WITHIN 48 HOURS OF INSPECTION.
4. MAINTENANCE OF WATERBARS SHALL BE PROVIDED UNTIL ROADWAY, SKIDTRAIL, OR DITCH HAS ACHIEVED PERMANENT STABILIZATION.
5. WATERBARS SHALL BE INSTALLED PRIOR TO ANY SWITCH BACK OR SHARP CURVE.

AMERICAN TOWER MASTER SPECIFICATION:

1. DIVISION 31 EARTHWORK SECTION 0312500 FOR EROSION AND SEDIMENT CONTROLS

RECOMMENDED WATER BAR SPACING	
PERCENT SLOPE	SPACING (FT)
1%	400*
5%	125
10%	78
15%	58

* OR AS DIRECTED BY THE ENGINEER OF RECORD.

2 DN-3 WATERBAR DETAIL

SCALE : N.T.S.

FOR PERMITTING ONLY

C-TECSOLAR
1 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860)-580-7174

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

NO	DATE	REVISION
0	07/11/16	CSC SUBMISSION
1		
2		
3		
4		
5		
6		

STATE OF CONNECTICUT
BRADLEY J. PARSONS
No. 26025
LICENSED PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

NOTE:

C-TECSOLAR "BARRETTE FARMS"

SITE ADDRESS: 1 BALLARD ROAD THOMPSON, CT
APT FILING NUMBER: CT481111
DRAWN BY: BJP
CHECKED BY: SMC
DATE: 07/11/16

SHEET TITLE: **NOTES & SPECIFICATIONS**

SHEET NUMBER: **DN-3**

PULLMAN
&COMLEY LLC
ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 18, 2016

Via Certified Mail/Return Receipt Requested

Mark D. Cunningham
2 Danny Trail
Vernon, CT 06066

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Sir/Madam:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

The Project will consist of ground-mounted solar PV panels, will qualify as a Class I renewable energy resource, and will supply 100% renewable energy in furtherance of Connecticut's renewable energy goals.

If you have any questions regarding the Project, then please contact the undersigned or the Council.

Sincerely,

Brad Mondschein

Brad N. Mondschein
Attorney for C-TEC Solar, LLC

PULLMAN
&COMLEY LLC
ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

David L. Holke
38 Town Farm Road
Woodstock, CT 06281

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Sir/Madam:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Sincerely,

Brad Mondschein

Brad N. Mondschein
Attorney for C-TEC Solar, LLC

PULLMAN
&COMLEY LLC
ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

Jill O. Duszlak
P.O. Box 6
Oxford, MA 01540

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Sir/Madam:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Sincerely,

Brad Mondschein

Brad N. Mondschein
Attorney for C-TEC Solar, LLC

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&COMLEY LLC
ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

Robert B. Smith
Carol R. Smith
31 Robbins Road
Thompson, CT 06277

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Sir/Madam:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Sincerely,

Brad Mondschein

Brad N. Mondschein
Attorney for C-TEC Solar, LLC

ACTIVE/76084.2/CARLSJ/5913514v1

PULLMAN
&COMLEY LLC
ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

Thompson First Selectman Ken Beausoleil
815 Riverside Drive
P.O. Box 899
North Grosvenordale, CT 06255-0899

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear First Selectman Beausoleil:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Sincerely,

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Brad N. Mondschein
Attorney for C-TEC Solar, LLC

PULLMAN
&COMLEY LLC
ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

Thompson Town Clerk
815 Riverside Drive
P.O. Box 899
North Grosvenordale, CT 06255-0899

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Town Clerk:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Sincerely,

Brad Mondschein

Brad N. Mondschein
Attorney for C-TEC Solar, LLC

PULLMAN
&COMLEY LLC
ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

Alvan Hill, Zoning Enforcement Officer
815 Riverside Drive
P.O. Box 899
North Grosvenordale, CT 06255-0899

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Mr. Hill:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Brad N. Mondschein
Attorney for C-TEC Solar, LLC

PULLMAN
&COMLEY LLC
ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

Mary Ann Chinatti
Director of Planning & Development
815 Riverside Drive
P.O. Box 899
North Grosvenordale, CT 06255-0899

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Ms. Chinatti:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Brad N. Mondschein
Attorney for C-TEC Solar, LLC

PULLMAN
&COMLEY LLC
ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

Greg Lee, Chairman
Planning and Zoning Commission
815 Riverside Drive
P.O. Box 899
North Grosvenordale, CT 06255-0899

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Chairman Lee:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Sincerely,

Brad Mondschein

Brad N. Mondschein
Attorney for C-TEC Solar, LLC

PULLMAN
&COMLEY LLC
ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

Lee Post
Building Inspector
815 Riverside Drive
P.O. Box 899
North Grosvenordale, CT 06255-0899

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Mr. Post:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Sincerely,

Brad Mondschein

Brad N. Mondschein
Attorney for C-TEC Solar, LLC

PULLMAN
&COMLEY LLC
ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

Carolyn Werge
Conservation Officer
815 Riverside Drive
P.O. Box 899
North Grosvenordale, CT 06255-0899

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Ms. Werge:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Sincerely,

Brad Mondschein

Brad N. Mondschein
Attorney for C-TEC Solar, LLC

PULLMAN
&COMLEY LLC
ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

Philip Thomas,
Chairman Conservation Commission
815 Riverside Drive
P.O. Box 899
North Grosvenordale, CT 06255-0899

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Mr. Thomas:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Sincerely,

Brad Mondschein

Brad N. Mondschein
Attorney for C-TEC Solar, LLC

PULLMAN
&COMLEY LLC
ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

Marla Butts
Wetlands Agent
815 Riverside Drive
P.O. Box 899
North Grosvenordale, CT 06255-0899

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Ms. Butts:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Sincerely,

Brad Mondschein

Brad N. Mondschein
Attorney for C-TEC Solar, LLC

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p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
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July 15, 2016

Via Certified Mail/Return Receipt Requested

Francesca G. Morano,
Chairman, Inland Wetlands Commission
815 Riverside Drive
P.O. Box 899
North Grosvenordale, CT 06255-0899

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Chairman Morano:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Attorney for C-TEC Solar, LLC

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p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

JoAnn Hall (first named)
Economic Development Commission
815 Riverside Drive
P.O. Box 899
North Grosvenordale, CT 06255-0899

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Ms. Hall:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Brad Mondschein

Brad N. Mondschein
Attorney for C-TEC Solar, LLC

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p 860 424 4319
f 860 424 4370
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www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

Northeastern Connecticut
Council of Governments
125 Putnam Pike, Rte. 12
P.O. Box 759
Dayville CT 06241-0759

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Sir/Madam:

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bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

Office of the Attorney General
State of Connecticut
Attorney General George Jepsen
55 Elm Street
Hartford, CT 06106

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Attorney General Jepsen:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

The Project will consist of ground-mounted solar PV panels, will qualify as a Class I renewable energy resource, and will supply 100% renewable energy in furtherance of Connecticut's renewable energy goals.

If you have any questions regarding the Project, then please contact the undersigned or the Council.

Sincerely,

Brad Mondschein

Brad N. Mondschein
Attorney for C-TEC Solar, LLC

PULLMAN
&COMLEY LLC
ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

Senator Richard Blumenthal
90 State House Square, 10th Floor
Hartford, CT 06103

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Senator Blumenthal:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
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www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

Senator Christopher Murphy
One Constitution Plaza, 7th Fl.
Hartford, CT 06103

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Senator Murphy:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
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July 15, 2016

Via Certified Mail/Return Receipt Requested

US Congressman Joe Courtney
77 Hazard Ave, Unit J
Enfield, CT 06082

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Congressman Courtney:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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p 860 424 4319
f 860 424 4370
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July 15, 2016

Via Certified Mail/Return Receipt Requested

State Representative Daniel S. Rovero
Legislative Office Building
Room 4004
Hartford, CT 06106

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Mr. Rovero:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

State Senator Mae Flexer
Legislative Office Building
Room 1800
Hartford, CT 06106

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Ms. Flexer:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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p 860 424 4319
f 860 424 4370
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July 15, 2016

Via Certified Mail/Return Receipt Requested

State of Connecticut
Department of Energy and Environmental Protection
Robert Klee, Commissioner
79 Elm Street
Hartford, CT 06106

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Commissioner Klee:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
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July 15, 2016

Via Certified Mail/Return Receipt Requested

State of Connecticut
Department of Public Health
c/o Dr. Raul Pino, Commissioner
410 Capitol Avenue, PO Box 340308
Hartford, CT 06134

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Commissioner Pino:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

State of Connecticut
Council on Environmental Quality
c/o Susan D. Merrow, Chair
79 Elm Street
Hartford, CT 06106

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Ms. Merrow:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

State of Connecticut
Department of Agriculture
c/o Steven K. Reviczky, Commissioner
165 Capitol Avenue
Hartford, CT 06106

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Commissioner Reviczky:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50/(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

State of Connecticut
Public Utility Regulatory Authority
c/o Arthur House, Chairman
Ten Franklin Square
New Britain, CT 06051

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Chairman House:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

State of Connecticut
Office of Policy and Management
Benjamin Barnes, Secretary
Office of Policy and Management
450 Capitol Avenue
Hartford, CT 06106

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Mr. Barnes:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
www.pullcom.com

July 15, 2016

Via Certified Mail/Return Receipt Requested

State of Connecticut
Department of Economic and Community Development
Catherine Smith, DECD Commissioner
505 Hudson Street
Hartford, CT 06106

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Commissioner Smith:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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ATTORNEYS

Brad N. Mondschein
90 State House Square
Hartford, CT 06103-3702
p 860 424 4319
f 860 424 4370
bmondschein@pullcom.com
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July 15, 2016

Via Certified Mail/Return Receipt Requested

State of Connecticut
Department of Transportation
c/o James P. Redeker, Commissioner
2800 Berlin Turnpike
Newington, CT 06111

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Commissioner Redeker:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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p 860 424 4319
f 860 424 4370
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July 15, 2016

Via Certified Mail/Return Receipt Requested

Connecticut Department of Emergency Services and Public Protection
Dora B. Schriro, Commissioner
1111 Country Club Road
Middletown, CT 06457

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Commissioner Schriro:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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July 15, 2016

Via Certified Mail/Return Receipt Requested

State of Connecticut Department of Consumer Protection
Jonathan A. Harris, Commissioner
165 Capitol Avenue
Hartford, CT 06106

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Commissioner Harris:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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July 15, 2016

Via Certified Mail/Return Receipt Requested

Connecticut Department of Administrative Services
Melody A. Currey, Commissioner
165 Capitol Avenue
Hartford, CT 06106

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Commissioner Currey:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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July 15, 2016

Via Certified Mail/Return Receipt Requested

State of Connecticut Department of Labor
Scott D. Jackson, Commissioner
200 Folly Brook Boulevard
Wethersfield, CT 06109

Re: C-TEC Solar, LLC; Petition for Declaratory Ruling For Solar Energy Project on Ballard Road, Thompson, CT

Dear Commissioner Jackson:

Pursuant to Section 16-50j-40(a) of the Connecticut Siting Council's (the "Council") regulations and Section 16-50*l*(b) of the General Statutes of Connecticut, we are notifying you that C-TEC Solar, LLC, intends to file on or shortly after **July 18, 2016**, a petition for declaratory ruling with the Council. This petition will request the Council's approval of the location and construction of an approximately three-and-three-quarter (3.75) megawatt solar photovoltaic ("PV") project (the "Project"), located at 1 Ballard Road in Thompson, Connecticut.

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Brad Mondschein

Brad N. Mondschein
Attorney for C-TEC Solar, LLC

ACTIVE/76084.2/CARLSJ/5913581v1

ENVIRONMENTAL ASSESSMENT

SOLAR FACILITY INSTALLATION

"BARRETTE FARMS"

1 BALLARD ROAD

THOMPSON, CONNECTICUT

WINDHAM COUNTY

Prepared for:

C-TEC SOLAR, LLC
1 Griffin Road South
Suite 200
Bloomfield, CT 06002

Prepared by:

All-Points Technology Corporation, P.C.
3 Saddlebrook Drive
Killingworth, CT 06419

July 2016

Table of Contents

Figures

Figure No. **Title**

Tables

Table No. **Title**

Appendices

Appendix **Title**

Additional Documents Provided Under Separate Cover

Project Introduction

All-Points Technology Corporation, P.C. ("APT") prepared this Environmental Assessment ("EA") on behalf of C-TEC SOLAR, LLC ("C-TEC") for the proposed installation of an approximately 3.75 megawatt ("MW") solar-based electric generating facility the ("Project or Facility") in the Town of Thompson, Connecticut (the "Town").

This EA has been completed to support C-TEC's submission of a petition for declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the construction, maintenance, and operation of the Project.

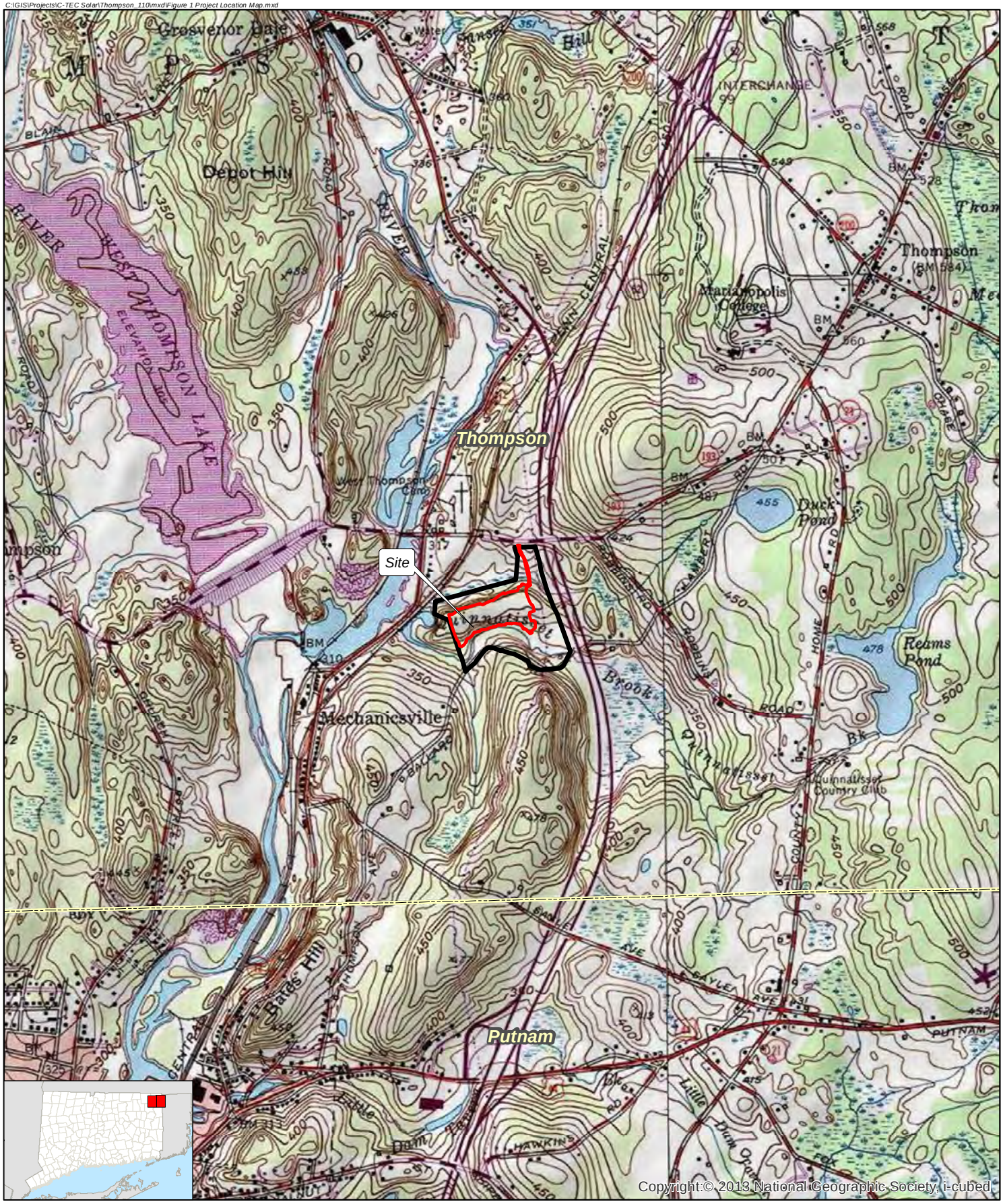
The Project would be located at 1 Ballard Road in Thompson, Connecticut ("Site"). The privately-owned Site consists of approximately 49.3 undeveloped acres.

The Site is situated generally southeast of the intersection of Thompson Road (CT 193), West Thompson Road, and Riverside Drive (CT 12), west of US Interstate 395 and north of Ballard Road. The immediate Site vicinity is characterized as a mix of agricultural and undeveloped land with a few residential parcels. Electric transmission lines extend through the eastern portion of the Site in a north/south direction. Farther to the south (±1.5 miles) residential and commercial development becomes more prevalent.

Upon its completion, the Facility would occupy approximately 10.75 acres of the Site. The Facility would be comprised of approximately 11,200 – 335 watt Hanwha Q.Plus L-G4.2 335 modules, 83 36 kW CPS SCA36KTL-DO/US-480 inverters, and three (3) transformers. The Facility would use a ground mounted, pile-driven, "Brilliant Rack" by Cantsink racking system. To enable development of the Facility, approximately 14 acres require some level of disturbance ("Project Area"). Electrical connections would extend overhead and connect to public utilities located on Thompson Road (CT 193).

Figure 1, *Project Location Map*, depicts the location of the Site and surrounding area.

C:\GIS\Projects\C-TEC Solar\Thompson_110\mxd\Figure 1 Project Location Map.mxd



Legend

- Site Boundary
- Project Area - Limit of Disturbance

Figure 1
Project Location Map

Proposed Solar Project
1 Ballard Road
Thompson, Connecticut

C-TECSOLAR

ALL-POINTS TECHNOLOGY CORPORATION

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W E
S

1,000 500 0 1,000 Feet

Map Notes:
Base Map Source: USGS 7.5 Minute Topographic Quadrangle Maps, Putnam and Thompson, CT (1970)
Site located on the Putnam Quadrangle
Map Scale: 1:24,000
Map Date: June 2016

Existing Conditions

The purpose of this section is to describe current conditions of the Site. A detailed discussion of the proposed Project's effects on the environment is provided in following sections of this document.

Project Location

The Site consists of a single, privately-owned parcel located southeast of the intersection of Thompson Road (CT 193), West Thompson Road, and Riverside Drive (CT 12), west of US Interstate 395 and north of Ballard Road, encompassing a total of approximately 49.3 acres. The Site is undeveloped and a large portion of the site shows signs of clearing limits due to agricultural activities.

The Project Area consists of approximately 14 acres of undeveloped, agricultural and former mining operations land with Little Mountain Brook to the north and Quinnatisset Brook to the south. Electric transmission lines, located on the eastern portion of the Site, run through the Site in a north/south direction. Upon completion, the Facility will occupy approximately 10.75 acres.

Site Access

Primary access to the Site is over an existing gravel and sand drive originating off of Thompson Road (CT 193) to the north of the Site. The primary access drive extends south into the Site where it connects to a system of fields and wooded areas. A secondary access drive is located in the southeast corner of the site off of Ballard Road. This access drive is gated and runs west along the northern portion of Wetland 2 before turning north into the existing agricultural fields.

Figure 2, *Existing Conditions Map*, depicts current conditions on the Site, its access, abutting properties, and several features discussed herein.

Wetlands and Watercourses

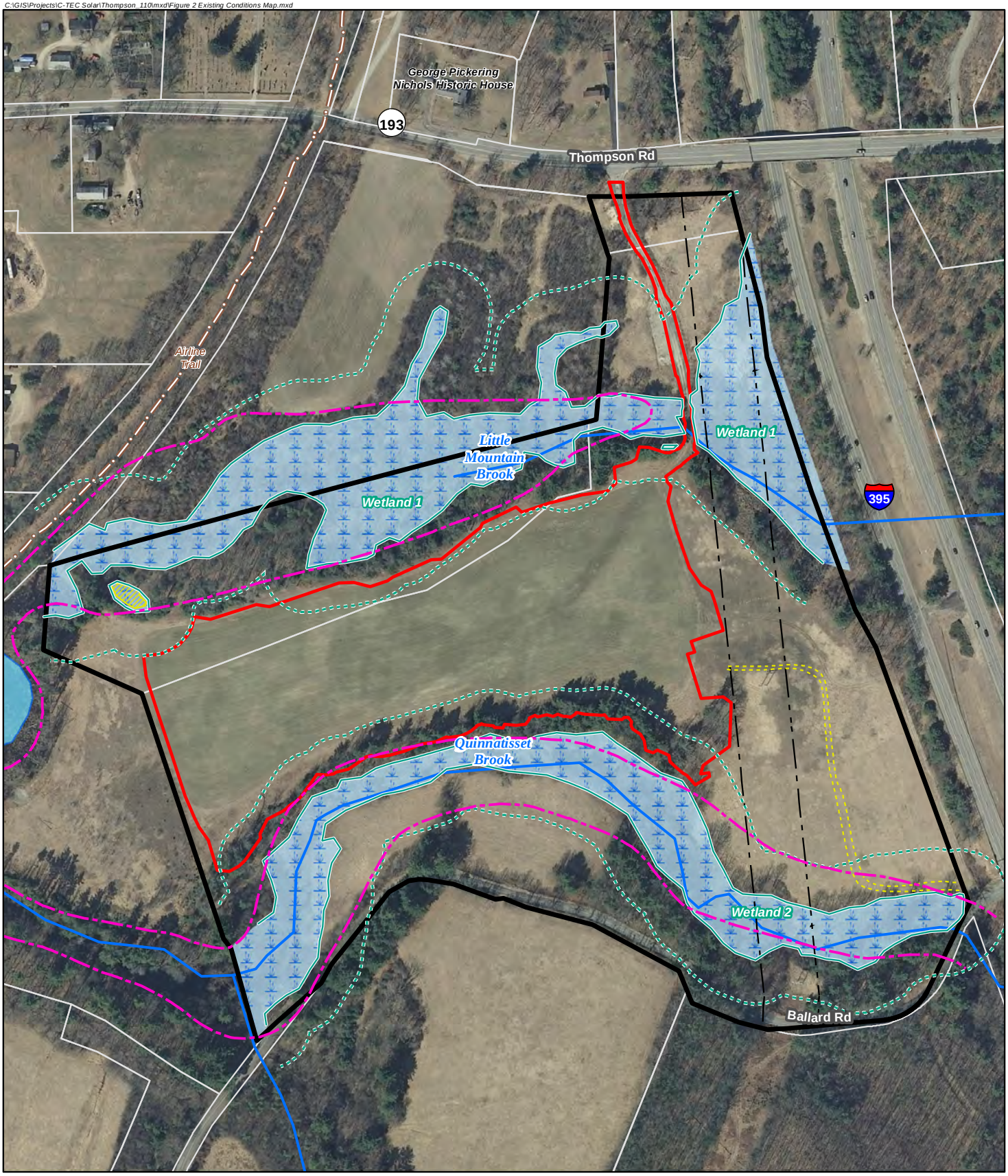
Dean Gustafson, a Connecticut registered Professional Soil Scientist with APT, conducted an inspection of the Site on February 26, 2016 to review and confirm wetland boundaries identified during a previous inland wetlands investigation/delineation performed in 1998 by Mike Schaffer.

Mr. Schaffer identified three (3) wetland areas, consisting of two (2) riparian corridors associated with Little Mountain Brook and Quinnatisset Brook, as well as a small isolated wetland pocket identified as an intermittent watercourse. Upon APT's review of these wetlands, it was observed that the small isolated wetland pocket did not contain hydric soils or exhibit features necessary to be regulated as an inland wetland. A review of the remainder of Mr. Schaffer's delineation was found to be substantially correct. A copy of the APT *Wetland Boundary Review Report* prepared by Mr. Gustafson and *Photo-Documentation* of existing resources at the Site are included as Appendix A. The wetland resources are summarized below and depicted on Figure 2.

Wetland 1 consists of a riparian corridor associated with a perennial stream identified as Little Mountain Brook. The dominant vegetation class of this wetland system is forested with interior areas of emergent habitats. Eastern and western extents of the system consist of a well-defined perennial stream with incised banks and narrow bordering wetlands. Central portions of the wetland consist of broad emergent wetland areas with diffuse braided stream complexes. The northeast corner of Wetland 1 consists of emergent/wet meadow habitat dominated by reeds, grasses, and ferns. Scrub/shrub habitats provide transitional ecotones to the forested interior of Wetland 1. In the far southwest corner of Wetland 1 a backwater depression disconnected from the Little Mountain Brook was observed to support vernal pool breeding habitat (discussed further below). An approximately 20-foot-wide existing gravel access road crosses Wetland 1 in its eastern extents conveying flows via twin 36" diameter reinforced concrete pipe culverts. Generally, northern edges of this wetland system consist of broad transitional wetland areas while southern edges consist of steeply sloping banks. This wetland drains west and eventually converges with Quinnatisset Brook (Wetland 2) before ultimately draining into the Quinebaug River. Soils are dominated by a complex of glaciofluvial material and alluvial deposits. Western extents of this stream system have experienced substantial flooding resulting in large open backwater areas as a function of downstream beaver activity.

Wetland 2 consists of a riparian corridor associated with a perennial stream identified as Quinnatisset Brook. The dominant vegetation class of this wetland system is forested with some edge scrub/shrub habitat. The entirety of the system consists of a well-defined perennial stream with incised banks and narrow bordering wetlands. In particular, the northern edge of this wetland consists of steeply sloping forested areas. Similar to conditions observed in Wetland 1, western extents of this stream system have experienced substantial flooding resulting in large open backwater areas as a function of downstream beaver activity. This wetland drains west and eventually converges with Little Mountain Brook (Wetland 1) before draining into the Quinebaug River. Soils are dominated by a complex of glaciofluvial material and alluvial deposits.

C:\GIS\Projects\C-TEC Solar\Thompson_110\mxd\Figure 2 Existing Conditions Map.mxd



Legend

- Site Boundary
- Project Area - Limit of Disturbance
- Utility Right-of-Way
- Path
- 100-Year Flood Zone Line
- Trail
- Approximate Assessor Parcel Boundary (CTDEEP)
- CTDEEP Watercourse
- CTDEEP Open Water
- Wetland Boundary
- 100' Wetland Buffer
- Wetland Area
- Vernal Pool

Figure 2
Existing Conditions Map

Proposed Solar Project
1 Ballard Road
Thompson, Connecticut

C-TECSOLAR

ALL-POINTS TECHNOLOGY CORPORATION

Map Notes:
Base Map Source: 2012 Aerial Photograph (CTECO)
Map Scale: 1 inch = 300 feet *Map Date: July 2016*

N W E S

300 150 0 300 Feet

Vernal Pools

Calhoun and Klemens (2002) provides the following operational definition of vernal pools:

Vernal pools are seasonal bodies of water that attain maximum depths in the spring or fall, and lack permanent surface water connections with other wetlands or water bodies. Pools fill with snowmelt or runoff in the spring, although some may be fed primarily by groundwater sources. The duration of surface flooding, known as hydroperiod, varies depending upon the pool and the year; vernal pool hydroperiods range along a continuum from less than 30 days to more than one year. Pools are generally small in size (<2 acres), with the extent of vegetation varying widely. They lack established fish populations, usually as a result of periodic drying, and support communities dominated by animals adapted to living in temporary, fishless pools. In the region, they provide essential breeding habitat for one or more wildlife species including Ambystomid salamanders (Ambystoma spp., called "mole salamanders" because they live in burrows), wood frogs (Rana sylvatica), and fairy shrimp (Eubranchipus spp.).

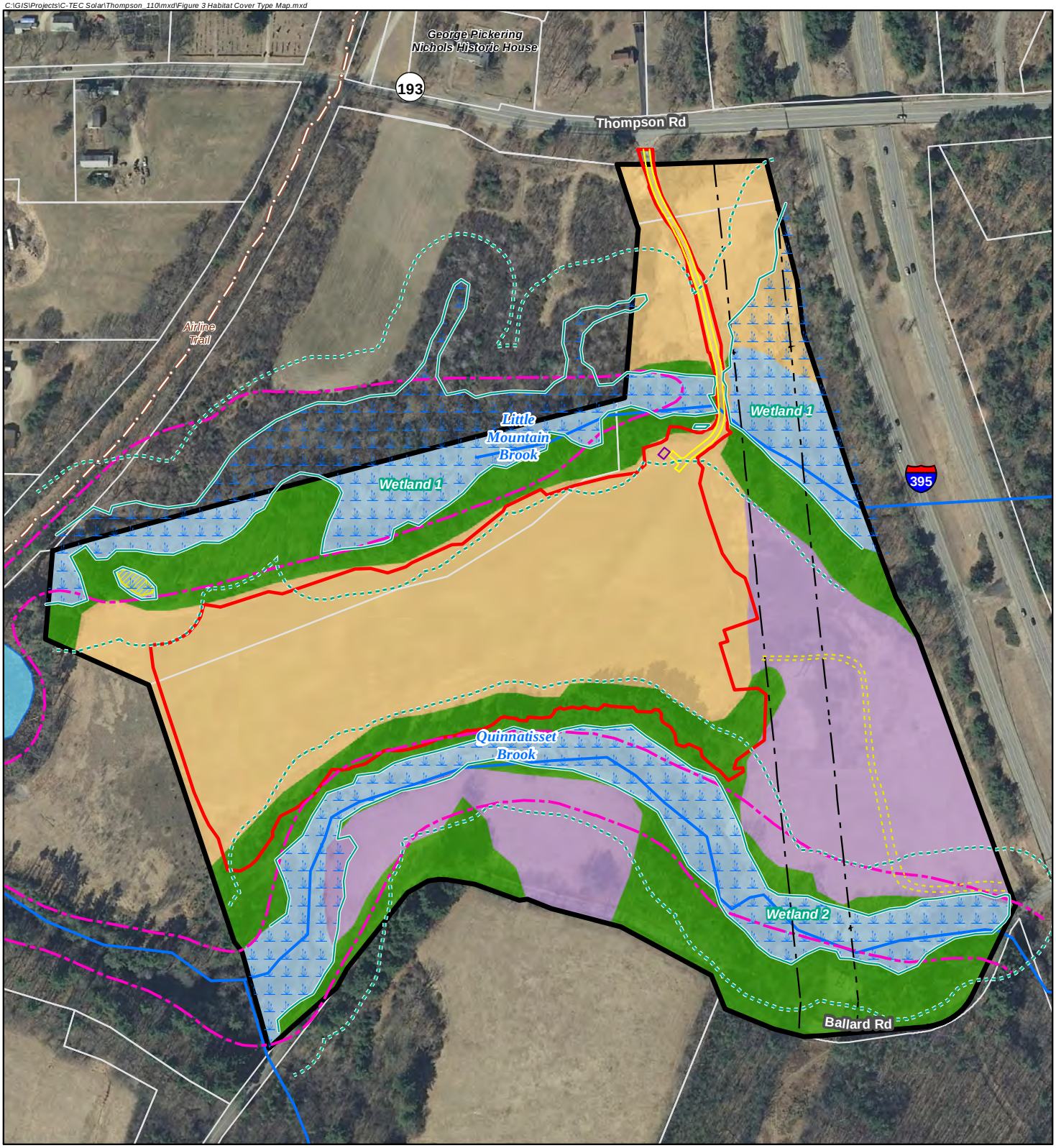
Vernal pool physical characteristics can vary widely while still providing habitat for indicator species. "Classic" vernal pools are natural depressions in a wooded upland with no hydrologic connection to other wetland systems. Often, vernal pools are depressions or impoundments within larger wetland systems. These vernal pool habitats are commonly referred to as "cryptic" vernal pools. Several species of amphibians depend on vernal pools for reproduction and development. These species are referred to as indicator vernal pool species and their presence in a wetland during the breeding season helps to identify that area as a vernal pool.

A vernal pool survey was conducted on April 6, 2016 by APT. Survey methods included visual observations, chorus surveys and cover searching. One (1) vernal pool (Vernal Pool 1) was identified interior to Wetland 1 and classified as a 'classic' style habitat. See Figure 3, *Habitat Cover Type Map*. Areas within 750 feet[1] of the Site were inspected for the potential of supporting vernal pool breeding habitat.

Two (2) vernal pool indicator amphibian species were confirmed breeding on the Site: the wood frog (*Lithobates sylvaticus*) and spotted salamander (*Ambystoma maculatum*).

[1] Consistent with the extent of the *Critical Terrestrial Habitat* (750 feet) conservation zone surrounding vernal pools as established by Calhoun and Klemens.

C:\GIS\Projects\C-TEC Solar\Thompson_110\mxd\Figure 3 Habitat Cover Type Map.mxd



Legend

- Site Boundary
- Project Area - Limit of Disturbance
- 100-Year Flood Zone Line
- Access to Facility
- Concrete Pad for Equipment Shed
- Utility Right-of-Way
- Path
- Trail
- Approximate Assessor Parcel Boundary (CTDEEP)
- CTDEEP Watercourse
- CTDEEP Open Water
- Wetland Boundary
- 100' Wetland Buffer
- Wetland Area
- Vernal Pool

Existing Habitat Cover Type: 49.26 acres

- Cool-Season Grass Hayfield: 9.96 acres
- Early Open Field/Old Field Succession: 17.3 acres
- Upland Forest: 13 acres
- Wetland Forest: 9 acres

Proposed Habitat Loss Within Project Area - Limit of Disturbance: -14.14 acres
Cool-Season Grass Hayfield: -0.03 acres
Upland Forest: -1.8 acres
Early Open Field/Old Field Succession: -12.31 acres

Figure 3
Habitat Cover Type Map

Proposed Solar Project
1 Ballard Road
Thompson, Connecticut

C-TECSOLAR

ALL-POINTS TECHNOLOGY CORPORATION

Map Notes:
Base Map Source: 2012 Aerial Photograph (CTECO)
Map Scale: 1 inch = 300 feet *Map Date: July 2016*

N W E S

300 150 0 300 Feet

Vernal Pool 1 is a depressional pool located in the western extent of the Site. This pool is located adjacent to the northwest corner of the Project Area within the forested edge of the open field. As a result, a majority of the intact supporting upland habitat is located away from the Project Area to the north, east, and west. Seasonally, this depression receives flood waters that overflow from the banks of Little Mountain Brook.

Tables 1 and 2 summarize the amphibians, reptiles and egg masses observed on the Site.

Table 1: Amphibians and Reptiles Observed During Vernal Pool Survey

Common Name	Scientific Name
Spotted salamander*	*Ambystoma maculatum*
Wood frog*	*Rana sylvatica*
Green frog	*Lithobates clamitans*

* Vernal Pool Indicator Species

Table 2: Egg Mass Survey Results for Vernal Pool Indicator Species

Pool	Total Egg Masses	
	Wood Frog	Spotted Salamander
1	30	90
Notes Due to water depths exceeding 5 ft. in the center of Vernal Pool 1, only periphery areas of the pool were surveyed.		

In order to assess these pools qualitatively, the methodology described in *Best Development Practices, Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States* (Calhoun and Klemens, 2002, a.k.a. the "BDP") was used. This assessment methodology utilizes a three-tiered rating system, with the tier designation determined by examining both the biological value of the pool in conjunction with the development condition of the habitat surrounding the pool, which is the area used by vernal pool amphibians during the non-breeding season. The higher the species diversity and abundance coupled with an undeveloped and forested landscape surrounding the pool, the higher the tier rating. Tier 1 pools are considered the highest quality pools, while Tier 3 pools are the lowest.

Vernal Pool 1 meets the biological criteria (pg. 9, Section A of the BDP) of Tier 1 vernal pools. This is due to the fact that Vernal Pool met two (2) of the three (3) following criteria[2]:

1. **Supported a minimum of two breeding indicator species**;
2. Supported a state-listed species (i.e., blue-spotted salamander complex); and
3. **Egg mass abundance exceeded the minimum egg mass threshold of 25**.

The landscape condition portion of the BDP assessment (pg. 9, Section B of the BDP) considers the level of development within 750 feet surrounding vernal pools. The assessment considers two (2) management zones, referred to as the *Vernal Pool Envelope* ("VPE", within 0 to 100 feet) and the *Critical Terrestrial Habitat* ("CTH", with 100 to 750 feet).

The landscape condition criteria for a Tier 1 pool require that it has no more than 25% development in the VPE and less than 50% development within the CTH. Vernal Pool 1 meets the landscape condition criteria for a Tier 1 pool as it has no existing development within its VPE and 12% existing development within the CTH zone.

Vegetation and Wildlife

The Project Area is located primarily within an area of Early Open Field/Old Field Succession ("Early Open/Old Field") habitat with periphery areas of Upland Forest habitat and, to a lesser extent, Cool-Season Grass Hayfield. Additional habitat types located on the Site, beyond the Project Area, include Wetland Forest. Transitional ecotones separate the various cover types including areas of emergent wet meadow and scrub/shrub habitats. These transitional areas have been grouped into adjacent habitat types due to their small sizes. The vegetative communities located on the Site are depicted on Figure 3, *Habitat Cover Type Map* and described below.

Early Open/Old Field Habitat: This habitat type area totals approximately 17 acres and is comprised of various open field species including creeping buttercup (*Ranunculus repens*), mullein (*Verbascum*), cow vetch (*Vicia cracca*), goldenrods (S*olidago spp.*), lesser daisy fleabane (*Erigeron strigosus*), field sorrel (*Rumex acetosella*), common yarrow (*Achillea millefolium*), and small patches of warm season grasses. The largest Early Open/Old Field

[2] A vernal pool must only meet one (1) of these criteria to be classified as a Tier 1 pool.

habitat block is located within the Project Area (approximately 10 acres). This habitat area is characterized by sparse vegetation with patches of exposed soil. The vegetation density is a result from somewhat compacted soil surface conditions, a lack of topsoil/fertility, and limited hydrology.

Upland Forest: This habitat type comprises the northern and southern peripheries of the Site. In addition, the southern portion of the Project Area consists of a narrow strip of forested upland habitat that borders the open field on steep slopes. These forested areas are dominated by complexes of Eastern hemlock (*Tsuga canadensis*), red maple (*Acer rubrum*), eastern white pine (*Pinus strobus*), and northern red oak (*Quercus rubra*). Suppressed overstory species include white oak (*Quercus alba*), and pignut hickory (*Carya ovata*). This habitat type covers approximately 13 acres of the Site. A majority of the forested areas consist of closed canopies with even aged forest. The understory is dominated by lowbush blueberry (*Vaccinium angustifolium*), beaked hazelnut, huckleberry (*Gaylussacia baccata*), musclewood (*Carpinus caroliniana*), and hophornbeam (*Osrya virbiniana*).

Since this small forest block has been fragmented (mostly consisting of 'edge' forest with no 'core' forest habitat present), habitat favored by larger wildlife species is not ideal. Generalist wildlife species that are tolerant of human disturbance would be expected such as raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), grey squirrel (*Sciurus carolinensis*), Virginia opossum (*Didelphus virginiana*), and eastern chipmunk (*Tamias striatus*).

Larger species such as coyote (*Canis latrans*), grey fox (*Urocyon cinereoargunteus*), white tailed deer (*Odocoileus virginianus*) and fisher (*Martes pennant*) also potentially take advantage of this habitat.

Cool-Season Grass Hayfield: This habitat type is isolated to the southeast corner of the Site, abutting to the east of the Project Area. Generally, the existing electrical transmission corridor, Route 395 and Wetland 2 bound this habitat type. It appears that the hayfield is harvested twice a year. Species dominant are typical of most cool-season grass hayfields found throughout the northeast United States. This habitat type covers approximately 10 acres of the Site. The eastern extents of the Project Area slightly encroach into this area.

Wetland Forest: This habitat type comprises a small percentage of the Site and is associated with both riparian corridors associated with Wetland 1 and 2. This habitat type is approximately 9.1 acres of the Site. A majority of these areas are dominated by edge wetland forest. However interior portions of Wetland 1 do consist of some emergent and scrub/shrub habitats. In addition, a larger area of emergent meadow does occur adjacent to the northeastern portions of Wetland 1. Both Wetland 1 and 2 also contain areas of open water. Dominant vegetation is consistent with the information provided in Appendix A, the *Wetland Boundary Review Report and Photo Documentation*.

Rare Species

The Connecticut Department of Energy and Environmental Protection ("CTDEEP") Natural Diversity Data Base ("NDDB") program performs hundreds of environmental reviews each year to determine the impact of proposed development projects on state listed species and to help landowners conserve the state's biodiversity. State agencies are required to ensure that any activity authorized, funded or performed by a state agency does not threaten the continued existence of endangered or threatened species. Maps have been developed to serve as a pre-screening tool to help applicants determine if there is a potential impact to state listed species.

The NDDB maps represent approximate locations of endangered, threatened and special concern species and significant natural communities in Connecticut. The locations of species and natural communities depicted on the maps are based on data collected over the years by CTDEEP staff, scientists, conservation groups, and landowners. In some cases, an occurrence represents a location derived from literature, museum records and/or specimens. These data are compiled and maintained in the NDDB. The general locations of species and communities are symbolized as shaded (or cross-hatched) areas on the maps. Exact locations have been masked to protect sensitive species from collection and disturbance and to protect landowner's rights whenever species occur on private property.

APT reviewed the most recent CTDEEP NDDB mapping (September 2015) to determine if any such species or habitats occur within the vicinity of the Site. Based on the NDDB mapping, the Site is not located within an area that Threatened, Endangered, or Special Concern species or critical habitats exist. On May 18, 2016, APT submitted a review request to the CTDEEP NDDB with respect to this Project to determine if any of the abovementioned concerns exist at the

Site. On June 6, 2016, APT received a response from CT DEEP stating that they *"do not anticipate negative impacts to State-listed species (RCSA Sec. 26-306) resulting from your proposed activity at the site based upon the information contained within the NDDB."* A copy of the *CTDEEP NDDB Review Letter* is included in Appendix B.

Water Quality

Groundwater underlying the Site is classified by the CTDEEP as "GA". This classification indicates groundwater within the area is presumed to be suitable for human consumption without treatment. Designated uses in GA-classified areas include existing private and potential public or private supplies of drinking water and base flow for hydraulically-connected surface water bodies. Based upon a review of available CTDEEP mapping, the Site is not located within a mapped preliminary or final Aquifer Protection Area ("APA"). A preliminary (Level B) mapped APA (Thompson Preliminary 70) is located approximately one (1) mile north of the Site. A final (Level A Adopted) APA (Park Street A 112) is located approximately 2.25 miles south of the Site.

Based upon CTDEEP mapping, the Site is located in Major Drainage Basin 3 (Thames River), Regional Basin 33 (French River), and Sub-Regional Drainage Basin 3300 (French River). Portions of the Site appear to be included in two (2) Local Drainage Basins. The northern portion of the Site is located within Local Drainage Basin 3300-09 (Unnamed brook at mouth at confluence of Quinnatisset Brook above French River). The southern portion of the Site is located within Local Drainage Basin 3300-10 (Quinnatisset Brook at mouth at confluence of unnamed brook above French River).

Two (2) named surface water bodies are located on portions of the Site. Little Mountain Brook is located on the northeast portion of the Site and Quinnatisset Brook is located on the southern portion of the Site along Ballard Road. Little Mountain Brook and Quinnatisset Brook are both classified by the CTDEEP as a Class A surface water bodies. Designated uses for Class A surface water bodies include habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; and water supply for industry and agriculture.

Scenic Areas

No State or locally-designated scenic roads or other scenic areas are located on or proximate to the Site.

Historic and Archaeological Resources

APT reviewed relevant historic and archaeological information to determine whether the Site holds potential cultural resource significance. No historical resources on or eligible for listing on the National register of Historic Places exist at the Site. The nearest historic resource, the George Pickering Nichols Historic House, is located across Thompson Road (Route 193) to the north of the Site, while the Thompson Hill Historic District is located approximately 0.25 miles to the northeast.

There are reported archaeological sites[3] in the general area, but none that extend or are located on the Site or proposed Project Area. Historically the Site had been mined for topsoil, sand and gravel. As a result, the Site no longer retains depository integrity. All reported archaeological sites are located to the northwest of the Site, around the West Thompson Reservoir, French River and Mechanicsville Pond areas.

APT submitted Project and Site historic/cultural information to the State Historic Preservation Office ("SHPO") for agency review and comment on May 26, 2016. Based on this information, it is evident that the Project Area has been thoroughly disturbed and no longer possesses the potential to yield intact archaeological deposits.

SHPO issued a written response on June 29, 2016 that stated *"No historical properties will be affected by this project. No further review is requested".* A copy of the *SHPO Submission* and their response letter is included in Appendix C.

Geology and Soils

Surficial materials encompassing the Site and surrounding area are comprised of deposits of sand and gravel, gravel, and sand and gravel overlying sand. Soils located on and in the vicinity of the Site are identified as Hinckley loamy sand, Sudbury sandy loam, Catden and

[3] Archaeological Preserves are State Register districts developed from archaeological data.

Freetown soils, Scarboro muck, and Udorthents-Urban land complex. Bedrock geology beneath the Site is identified as Tatnic Hill Formation. Tatnic Hill Formation is described as a medium to dark-gray, medium-grained gneiss or schist composed of quartz, andesine, biotite, garnet, and sillimanite, locally kyanite, muscovite, or K-feldspar, interlayered with locally mappable units and thinner layers of rusty-weathering graphitic pyrrhotitic two-mica schist, amphibolite, and calc-silicate rock.

Floodplain Areas

APT reviewed the United States Federal Emergency Management Agency ("FEMA") Flood Insurance Rate Maps ("FIRM") for the Site. A FIRM is the official map of a community on which FEMA has delineated both the special hazard areas and risk premium zones applicable to the community. Portions of the Site are mapped on two (2) FIRM maps. The northern portion of the Site is mapped on FIRM PANEL #090117 0012 B, dated November 1, 1984. Based upon the reviewed FIRM Map, the northern portion of the Site is located in an area designated as Zone C, which is defined as an area of minimal flooding. The central and southern portions of the Site are mapped on FIRM PANEL #090117 0014 B, dated November 1, 1984. Based upon the reviewed mapping, low-lying areas associated with Little Mountain Brook and Quinnatisset Brook are designated as Zone A, which is defined as a high risk flood area. Remaining portions of the Site, roughly located between the low-lying areas of Little Mountain Brook and Quinnatisset Brook are designated as Zone C, areas of minimal flooding.

Recreational Areas

The nearest recreational area is the Connecticut Airline Trail State Park which abuts the Site boundary to the west. Additional recreation areas are located in the Town but not proximate to the Site (see Table 3, *Non-Residential Features within Two Miles of the Site*).

Noise

A Noise Evaluation Study was prepared for the Project by HMB Acoustics LLC of Avon, Connecticut[4]. Based on sound measurements obtained at the Site and adjacent locations, the average levels range from 32 to 37 dBA[5].

Lighting

No lighting exists at the Site today.

Other Surrounding Features

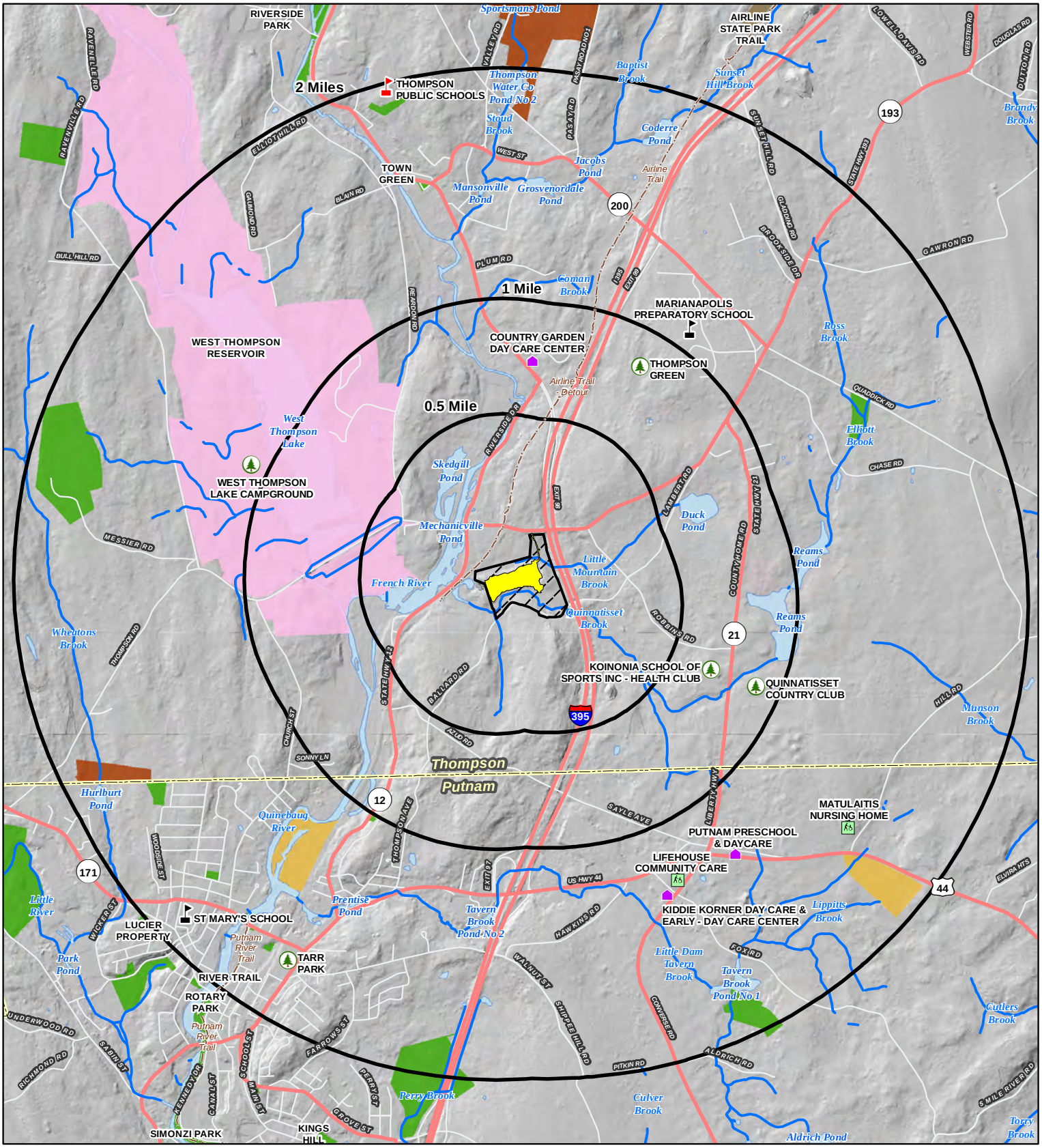
The locations of non-residential development and other resources within two miles of the Site are listed in Table 3 and depicted on Figure 4, *Surrounding Features Map*.

[4] The HMB report is provided in Appendix G. See also the Noise discussion in Effects on Environment section of this document.

[5] Sound measurements obtained on June 17, 2016 by HMB Acoustics LLC, of Avon, Connecticut.

Table 3: Non-Residential Features within Two Miles of the Site

Resource Type	Name	Address	Distance from Project Area
Daycare	Country Garden Day Care Center	423 Riverside Dr, Thompson	0.75 mile N
	Kiddie Korner Day Care & Early (Day Care Center)	554 Liberty Hwy # 12, Putnam	1.3 miles NW
	Putnam Preschool & Daycare	176 Providence Pike, Putnam	1.3 miles SE
Community Center	none		
Senior Facility	Matulaitis Nursing Home	10 Thurber Rd, Putnam	1.5 miles SE
	Lifehouse Community Care LLC	554 Liberty Hwy # 2, Putnam	1.25 miles SE
Hospital	none		
School	Thompson Public Schools	785 Riverside Dr, Thompson	2 Miles NW
	St Mary's School - Private School	23 Marshall St, Putnam	1.8 miles SW
	Marianapolis Preparatory School (Private)	26 Chase Rd, Thompson CT	1.05 miles NE
Recreational / Park	Airline Trail State Park	Thompson	Abuts Site Boundary to the W
	Koinonia School of Sports Inc (Health Club)	240 County Home Rd, Thompson	0.6 mile SE
	Putnam River Trail	Putnam	1.7 miles SW
	Quinnatisset Country Club	241 County Home Rd, Thompson	0.9 mile SE
	Tarr Park	Putnam	1.7 miles SW
	Thompson Green	Thompson	0.9 mile NE
	West Thompson Lake Campground	449 Reardon Rd, Thompson	1.1 miles NW
	West Thompson Reservoir	Thompson	0.3 mile W
Youth Camp	none		



Base Map Source: ESRI & CTECO Shaded Relief
Map Date: June 2016

Figure 4
Surrounding Features Map

Proposed Solar Project
1 Ballard Road
Thompson, Connecticut

C-TECSOLAR

ALL-POINTS TECHNOLOGY CORPORATION

Effects on the Environment

The purpose of this section is to analyze and discuss the Project's potential effects on the environment and demonstrate that the proposed development will have no significant adverse effect on the surrounding environment.

Proposed Project Development

The Project Area will include a ±10.75-acre solar facility on the Site. The Facility will be developed in the central portion of the Site, which is primarily a mix of cleared land that was used for material mining and agriculture. Surrounding the Project Area is forested land with a mix of coniferous and deciduous species ranging from 6 to 28 inches in diameter. Trees within ±0.84-acre of Upland Forest in the southern portion of the Project Area would be selectively removed to prevent shading of the Facility. New soil disturbances will be minimized to facilitate the installation of the solar arrays and associated equipment. The Project Area includes relatively level grades such that the development can be generally accomplished without significant cuts and/or fills.

Based on the Site's relative remoteness and natural/man-made barriers, no fencing is planned for the Facility. Two (2) existing entrances to the Site, one each from the north and southeast, would be gated and bordered by chain-link fencing to limit unauthorized access. A 20-foot by 20-foot storage barn will be constructed near the northeast corner of the Facility for the property owner to store agricultural equipment.

The Facility would be comprised of approximately 11,200 – 335 watt Hanwha Q.Plus L-G4.2 335 modules, 83 36 kW CPS SCA36KTL-DO/US-480 inverters, and three (3) transformers. The Facility would use a ground mounted, pile-driven, "Brilliant Rack" by Cantsink racking system. To facilitate the development of the Site, a total of approximately 14 acres require some level of disturbance. Electrical connections would extend overhead and connect to public utilities located on Thompson Road (CT 193). Once construction is complete, disturbed areas will be seeded for the establishment of permanent cover (turf).

Figure 5, *Proposed Conditions Map*, depicts the proposed Project layout. Site Drawings are provided under separate cover.

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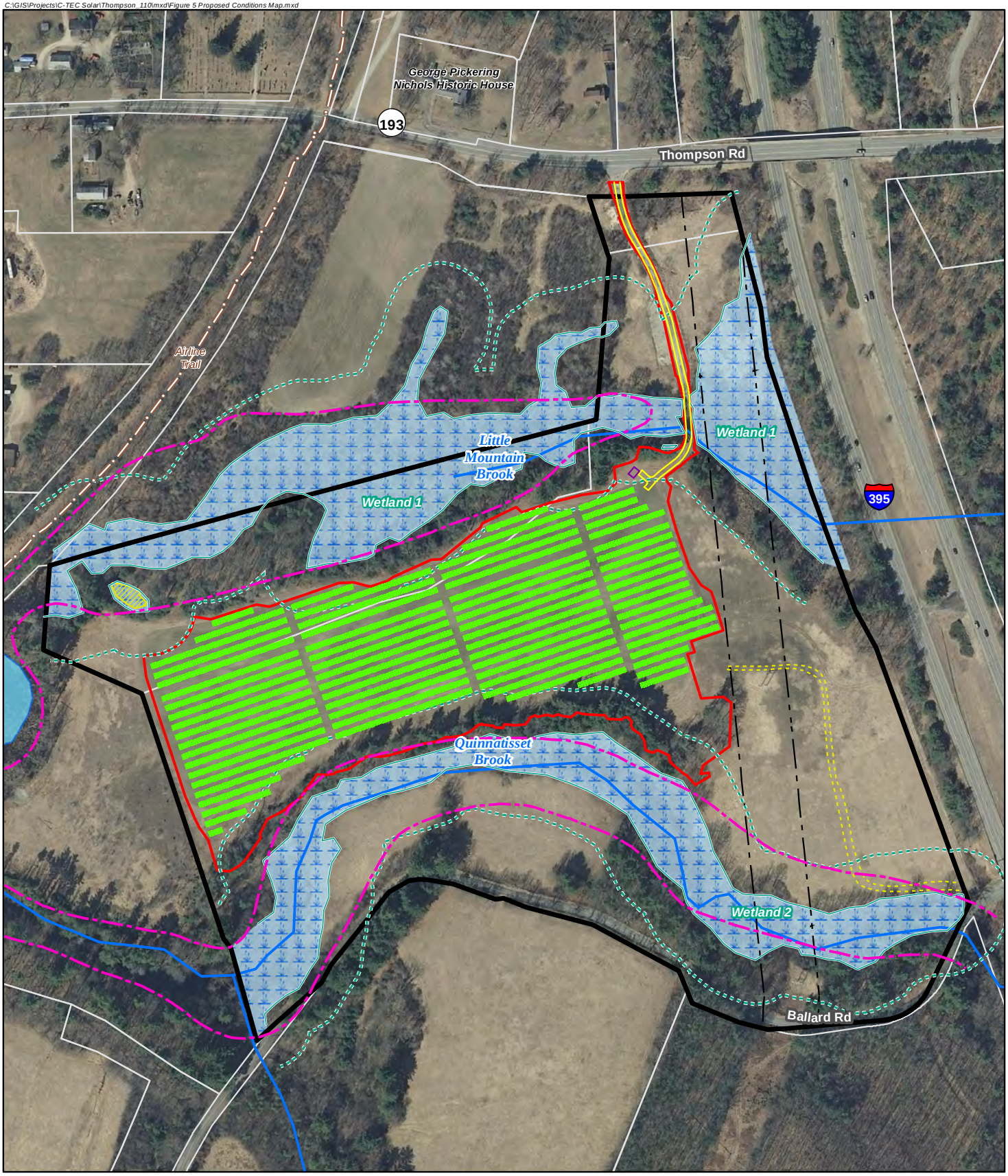


Legend

- Site Boundary
- Project Area - Limit of Disturbance
- 100-Year Flood Zone Line
- Ground Mounted Solar Module Array
- Access to Facility
- Concrete Pad for Equipment Shed
- Utility Right-of-Way
- Path
- Trail
- Approximate Assessor Parcel Boundary (CTDEEP)
- CTDEEP Watercourse
- CTDEEP Open Water
- Wetland Boundary
- 100' Wetland Buffer
- Wetland Area
- Vernal Pool

Map Notes:
Base Map Source: 2012 Aerial Photograph (CTECO)
Map Scale: 1 inch = 300 feet *Map Date: July 2016*

N W E S

300 150 0 300 Feet

Figure 5
Proposed Conditions Map

Proposed Solar Project
1 Ballard Road
Thompson, Connecticut

C-TECSOLAR

ALL-POINTS TECHNOLOGY CORPORATION

Public Health and Safety

The Project would be designed to applicable industry, State, and local codes and standards and would not pose a safety concern or create undue hazard to the general public. The Facility would not consume any raw materials, would not produce any by-products and would be unstaffed during normal operating conditions. The Facility would not be fenced but the Site's two (2) entrances would be gated, limiting access to authorized personnel only.

Overall, the Project will meet or exceed all health and safety requirements applicable to electric power generation. Each employee working on Site will:

- Receive required general and Site specific health and safety training;
- Comply with all health and safety controls as directed by local and state requirements;
- Understand and employ the Site health and safety plan while on the Site;
- Know the location of local emergency care facilities, travel times, ingress and egress routes; and
- Report all unsafe conditions to the construction manager.

Construction equipment will be required to access the Site during normal working hours. Please refer to the *Construction Schedule* and *Construction Work Hours/Days Letter* provided in Appendix D and Appendix E, respectively. After construction is complete and the Facility (unstaffed) is operable, traffic at the Site will be minimal. Two times per year the site will be mowed. Maintenance of the electrical equipment will occur once per year. Any equipment that breaks down will be repaired on an as needed basis. Annual maintenance will typically be two technicians for a day. The solar modules are designed to absorb incoming solar radiation and minimize reflectivity, such that only a small percentage of incidental light will be reflected off the panels. This incidental light is significantly less reflective than common building materials, such as steel, or the surface of smooth water. The panels will be tilted up toward the southern sky at a fixed angle of 25 degrees, further reducing reflectivity.

Local, State and Federal Land Use Plans

The Project is consistent with local, State, and Federal land use plans, including the 2010-2020 Town of Thompson Plan for Conservation and Development (TPCD) which outlines the need for expanding "*the use of photovoltaic panels…at Town owned facilities, private businesses and residential dwellings*". TPCD states that *"over reliance on fossil fuels is acknowledged to be a substantial problem for Thompson, and society in general and is likely to remain a problem in the near future".* This Project will support TPCD's policies and strategies by developing a renewable energy resource while not having a substantial adverse environmental effect.

Existing and Future Development

C-TEC Solar is in the process of negotiating a power purchase agreement with two (2) municipal agencies. Once finalized, these municipalities would be able to take advantage of a virtual net metering program to offset their electric consumption. Additionally, the Project would benefit these communities by improving electrical service for existing and future municipal development through enhanced capacity.

Roads

The existing access drive originating off Thompson Road (CT 193) will be used during construction and for permanent access to maintain and monitor the Facility. Minimal upgrades would be required for the access road. Developing a stable gravel apron, regrading/reestablishing select areas along the existing access drive and the installation of one (1), 16-foot-wide, chain link security access gate south of the intersection of Thompson Road is all that would be required. A secondary access road is located to the southeast of the Facility on Ballard Road. This access road would not be used in association with the Facility but will continue to be used by the property owner for access to portions of the Site. The existing security gate would be upgraded to one similar to the proposed gate on Thompson Road. During construction, temporary interior field roads would be used to access construction locations.

Wetlands

No wetlands or watercourses will be directly impacted by the Project. The existing access road, which currently crosses Wetland 1 via culvert, will not require minimal upgrading. All clearing and grading limits for the Facility's infrastructure (solar arrays and associated equipment) would maintain a setback of approximately ±45 feet to the south of Wetland 1.

All the Project-related activities located proximate to Wetland 2 consist of mature tree and understory removal on a side-slope that provides cover to the riparian corridor. The Facility was redesigned to minimize clearing requirements in this area. In addition, a tree clearing mitigation plan is proposed that will minimize soil disturbances to the extent feasible, protect the remaining vegetation, and reestablish understory vegetation in cleared areas. The closest tree clearing to Wetland 2 will occur ±20 feet to the north of this resource.

Based on the current design, no direct impacts are expected to occur to any wetland resources.

Potential short term temporary impacts associated with the Project's construction activities will be minimized by the proposed sedimentation and erosion controls which would be installed and maintained during construction activities in accordance with the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Control*. Potential long term secondary impacts to wetland resources possibly associated with the operation of this Facility are minimized by the fact the development will be unstaffed (generating negligible traffic) and minimizes the creation of impervious surfaces by using an existing gravel access drive and treating the majority of the surface around the solar installation with native grass/vegetation. Stormwater generated by the proposed development will be properly handled and treated in accordance with the 2004 Connecticut Stormwater Quality Manual. A Stormwater Report is provided under separate cover. As a result of the proposed development's location proximate to wetlands, BMPs are recommended to avoid unintentional impacts to these resources during construction activities. These proposed BMPs are outlined in the *Wetland and Vernal Pool Protection Plan* which is included in Appendix F. By implementing these management techniques, the proposed Project development will not result in an adverse impact to wetland resources.

Vernal Pools

No development is proposed within the VPE management zone of the Site's Vernal Pool. This will protect habitat that is critical to preserving vernal pool water quality and detritus sources. These areas also provide habitat for breeding adults as well as emerging metamorphs. Activities proposed within the VPE to Vernal Pool 1 are limited to proposed habitat improvements as described subsequently in the Mitigation Strategies section.

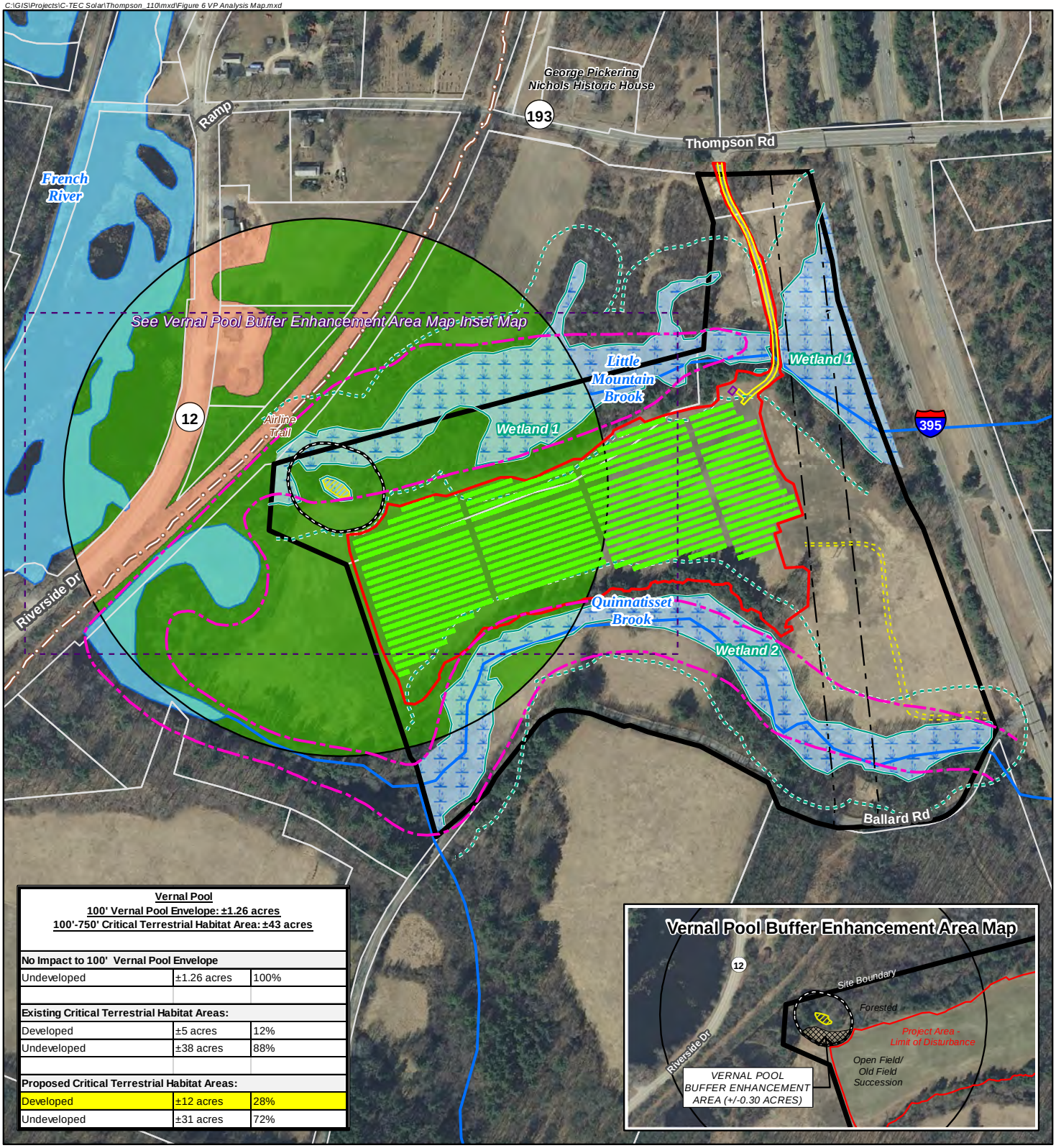
Table 4 and Figure 6, *Vernal Pool Analysis Map* summarize and depict the Project impacts within the CTH management zone.

Table 4: Vernal Pool Impact Analysis

Vernal Pool	Percent Existing CTH Development	Percent Increase in CTH Development as Proposed	Total Post-Development CTH
1	12%	16%	28%

Vernal Pool 1 is a Tier 1 pool using the pre-development assessment methodology. This vernal pool post development will exceed the 25% threshold (28%) within the CTH. Because the BDP recommends no more than 25% development within the CTH, Pool 1 will slightly exceed the BDP guidelines. The proposed CTH development increase is within suboptimal habitat associated with early open field habitat consisting of sparse vegetation and little to no duff layer. Regardless, a Vernal Pool Buffer Enhancement Plan is proposed to compensate for loss of suboptimal habitat within the CTH as described in subsequent sections. Implementation of BMPs is recommended to avoid unintentional impacts or mortality to vernal pool herpetofauna (i.e., spotted salamander, wood frog, turtles, etc.) during construction activities. These proposed BMPs are outlined in the *Wetland and Vernal Pool Protection Plan* (see Appendix F). It should also be noted that the Project was redesigned to eliminate any impacts to the VPE.

C:\GIS\Projects\C-TEC Solar\Thompson_110\mxd\Figure 6 VP Analysis Map.mxd



Vernal Pool
100' Vernal Pool Envelope: ±1.26 acres
100'-750' Critical Terrestrial Habitat Area: ±43 acres

No Impact to 100' Vernal Pool Envelope		
Undeveloped	±1.26 acres	100%
Existing Critical Terrestrial Habitat Areas:		
Developed	±5 acres	12%
Undeveloped	±38 acres	88%
Proposed Critical Terrestrial Habitat Areas:		
Developed	±12 acres	28%
Undeveloped	±31 acres	72%

Legend

- Site Boundary
- Project Area - Limit of Disturbance
- 100-Year Flood Zone Line
- Ground Mounted Solar Module Array
- Access to Facility
- Concrete Pad for Equipment Shed
- Utility Right-of-Way
- Path
- Trail
- Approximate Assessor Parcel Boundary (CTDEEP)
- CTDEEP Watercourse
- CTDEEP Open Water
- Wetland Boundary
- 100' Wetland Buffer
- Wetland Area
- Vernal Pool
- 100' Vernal Pool Envelope
- 100'-750' Critical Terrestrial Habitat Area

Critical Terrestrial Habitat

- Developed
- Undeveloped

Figure 6
Vernal Pool Analysis

Proposed Solar Project
1 Ballard Road
Thompson, Connecticut

Map Notes:
Base Map Source: 2012 Aerial Photograph (CTECO)
Map Scale: 1 inch = 400 feet *Map Date: July 2016*

N W E S

400 200 0 400 Feet

C-TECSOLAR

ALL-POINTS TECHNOLOGY CORPORATION

Vegetation and Wildlife

The Project will consist of approximately ±14 acres of ground disturbance, the majority of which is located within Early Open/Old Field habitat. A small margin of Upland Forest will also be impacted by the Project to reduce shading. The solar arrays and gravel and grass surfaces associated with the construction of the Project will alter the habitat types present on the Site. Provided below is an analysis of impact to the Site habitats.

Early Open/Old Field Habitat: These types of successional (i.e., non-forested) habitats have potential to support some of Connecticut's rarest bird species, provided they are of sufficient size. To support habitat specialists, these typically need to be a *minimum* patch size of 10 acres. Open field block size at the Site is approximately 12 acres and bisected by Wetland 1. The open field within the Project Area totals approximately 12.5 acres. As such, it is at the approximate *minimum* patch size for potentially supporting habitat specialists. During field inspections at the Site, no typical habitat specialists were observed. Further, based on consultations with the CTDEEP NDDB no records for rare species potentially utilizing this field have been identified.

These early-successional are also capable of supporting habitat specialists that do not require as large a patch size. These are species often associated with the brushy and infrequently maintained field edges that often develop on small farms. Such species include the song sparrow, northern mockingbird and indigo bunting, among others. This habitat type will not be entirely lost as similar habitat exists on-Site to the north.

Upland Forest: Impacts to forested habitat resulting from development of the Facility would be isolated to a single narrow patch located south of the Project Area (and north of Wetland 2). A majority of the ±1.8 acres of forest where tree removal is proposed is located in 'edge' forest habitat resulting from maintaining the Site's open field areas. No 'core' forested habitat will be impacted by the Project. However, the Upland Forest within the Project Area is located along steep slopes where existing vegetation provide cover within the riparian corridor of Quinnatisset Brook (Wetland 2). As a result of the removal of some edge forest habitat and potential impacts to the supporting riparian corridor, an Upland Forest Clearing Mitigation Plan has been proposed (discussed below).

Rare Species

No rare species will be impacted by the Project. In a June 6, 2016 letter, CTDEEP confirmed that they *"do not anticipate negative impacts to State-listed species (RCSA Sec. 26-306) resulting from your proposed activity at the site based upon the information contained within the NDDB."* A copy of the *CTDEEP NDDB Review Letter* is included in Appendix B.

Northern Long-eared Bat

One federally-listed[6] threatened species is known to occur in the vicinity of the Site, the northern long-eared bat ("NLEB"; *Myotis septentrionalis*). Northern long-eared bat's range encompasses the entire State of Connecticut. Suitable NLEB roost habitat includes trees (live, dying, dead, or snag) with a diameter at breast height ("DBH") of three (3) inches or greater. The proposed Project will result in the removal of trees greater than three (3) inches DBH. Therefore, since NLEB potentially occurs in the vicinity of the Site, the Site supports potential habitat for NLEB and the proposed activity may potentially impact its habitat, a determination of compliance with Section 10 of the ESA is required. The *Northern long-eared bat areas of concern in Connecticut to assist with Federal Endangered Species Act Compliance map* (February 1, 2016) was reviewed to determine the locations of any known maternity roost trees or hibernaculum. This map reveals that there are currently no known NLEB maternity roost trees in Connecticut. The nearest NLEB habitat resource to the Project Area is located in East Granby ±43 miles to the west. In accordance with the USFWS Key for NLEB, the Project will not likely result in an adverse effect or incidental take[7] of NLEB and does not require a permit from USFWS. Therefore, no further consultation with USFWS is required for the proposed activity. A full review of the Endangered Species Act Compliance Determination is provided in Appendix G.

Mitigation Strategies

Upland Forest Clearing Mitigation: Tree removal within mature forested upland areas is proposed to minimize shading of the Facility. Work will be conducted within approximately 1.8

[6] Listing under the federal Endangered Species Act

[7] "Incidental take" is defined by the Endangered Species Act as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." For example, harvesting trees can kill bats that are roosting in the trees, but the purpose of the activity is not to kill bats.

acres of mature upland forest. All of the trees selected for removal are located along the southern edges of the Project Area adjacent to Wetland 2. Due to the presence of moderate to steep slopes in the area proposed for clearing, and the co-occurrence of Quinnatisset Brook the following measures will be implemented during the clearing work within the upland forested areas. Firstly, to promote slope stabilization during and after construction, techniques will be employed that minimize disturbance in these areas. Harvesting methods will be used that will limit equipment and vehicular traffic on slopes through the use of machinery that reaches from the top of slope where feasible. In addition, when access onto slopes is deemed necessary, efforts will be made to protect (to the greatest extent feasible) all existing vegetation in the understory not to be removed. All soils destabilized during clearing will be immediately stabilized with a combination of erosion controls blankets (composed of naturally woven/non-synthetic materials), hydro-seeding, or suitable alternatives. All cleared areas will be under sown with an approved conservation seed mix composed of native seed stock suitable for the Site conditions.

Vernal Pool Buffer Enhancement:

As stated previously, no impacts will occur within the VPE associated with Vernal Pool 1. Development is proposed within the vernal pool's CTH. While the proposed impacts conform to the BDP standards, and generally occur outside primary upland terrestrial habitat favored by obligate vernal pool species, mitigation for the impacts was deemed appropriate. The following is a discussion of the proposed mitigation strategy.

Areas south of Vernal Pool 1 are currently comprised of early open field habitat that is generally considered non-optimal habitat for vernal pool obligate species. The Project was redesigned to eliminate any development within the 100-foot VPE. This redesign resulted in leaving a portion of open field habitat to the south of Vernal Pool 1 (within the VPE) as a prime opportunity for mitigation. Specifically, C-TEC Solar is proposing to plant and under sow this area with a conservation seed mix to promote a softer ecotone transition. Where feasible (outside the shading effects of the proposed Project) trees will be planted to stimulate forest regeneration. Within the shading influence of the Project scrub/shrub and wildflower plantings will occur. Test pits within this area revealed the need for increased fertility to support this mitigation plan. As such, it is proposed that topsoil free of noxious seed be added to the vernal pool mitigation

area to sufficient depths to support the recommended plantings (typically no greater than 6 inches of added topsoil). Detailed planting schedules and phasing of mitigation work will be provided to contractors on Construction Drawings. All mitigation work will be conducted under the supervision and direction of an environmental monitor experienced in vernal pool buffer enhancement projects.

Water Quality

The Facility will be unstaffed and no potable water uses or sanitary discharges are planned. No liquid fuels are associated with the operations of the Project. Once operative, the stormwater generated by the proposed development will be properly handled and treated in accordance with the 2004 *Connecticut Stormwater Quality Manual*. Therefore, upon its completion the Project would have no adverse environmental effect on wetlands, watercourses or other water resources.

No APAs are located on or proximate to the Site. Little Mountain Brook is located on the northeast portion of the Site and Quinnatisset Brook is located on the southern portion of the Site along Ballard Road.

To safeguard these resources from potential impacts during construction, C-TEC is committed to implementing protective measures in the form of a Stormwater Protection Plan. This Plan will include monitoring of established sedimentation and erosion controls that will be installed and maintained in accordance with the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Control*. C-TEC will also apply for a *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities* from CTDEEP. Therefore, with the incorporation of adequate protective measures, stormwater runoff from the Project development will not result in an adverse impact to water quality associated with the surface water bodies located on the Site.

Air Quality

No emission sources are associated with the operations of the Facility. Therefore, no impacts to air quality are anticipated as part of the proposed Project.

Scenic Areas

No state designated scenic areas would be physically or visually impacted by development of the solar Project.

Historic and Archaeological Resources

APT consulted with the SHPO for concurrence that no historic or archaeological resources would be affected by the Project. Based on the results of APT's research, the Project Area has been thoroughly disturbed and no longer possesses any potential to yield intact archaeological deposits. In addition, the Project would not result in any impacts to the view shed of the George Pickering Nichols Historic House, the Thompson Hill Historic District or the Connecticut Airline Trail State Park.

APT submitted Project and Site historic/cultural information to SHPO for agency review and comment on May 26, 2016. SHPO issued a written response on June 29, 2016 that stated *"No historical properties will be affected by this project. No further review is requested".* A copy of the *SHPO Submission* and their response letter is included in Appendix C.

Geology and Soils

No adverse effects are anticipated on natural resources occurring at and/or nearby the Site. Once vegetative clearing activities are completed, minimal grading is required for construction of the Project.

Floodplain Areas

The Project Area is located in an area designated as Zone C, which is defined as an area of minimal flooding.

Recreational Areas

No recreational areas would be impacted by the Project. The Airline Trail State Park is the nearest recreational area abutting the Site to the west. All construction activities would be at least 300 feet away. The intervening areas are buffered by mature growth trees and dense underbrush that would mitigate any potential views or sightlines.

Noise

The only equipment proposed for the Project that would generate noise consists of the fans associated with the inverters. The Noise Evaluation Study prepared by HMB Acoustics LLC of Avon, Connecticut, determined that after the Project is constructed and in service, the combined noise levels will comply with CTDEEP criteria for Commercial Emitters to both Commercial and Residential Receiver Zones.

After the Project is constructed and in service, the highest noise level at an adjacent property is anticipated to be 45dBA, which is well below the most conservative criteria of 55 dBA for daytime[8] as established by the State of Connecticut Noise Control regulations *(CGS 22a/22a – 69-1 through 7).* The inverters are inactive at night. During those times the inverters are operative, noise levels at nearby property lines and/or residences would not change substantially and continue to be well below applicable criteria (estimated at 28 to 45 dBA).

Please refer to the *Noise Evaluation Report* provided in Appendix H.

Lighting

No lighting is planned for the Facility.

Other Surrounding Features

No adverse effects are anticipated to the features identified in Figure 4, primarily because of their sufficient distances from the Project.

Visibility

Covering approximately 10.75 acres in total, the Facility will consist of a total of 11,200 non-reflective solar panels. The solar panels and appurtenances will not exceed a height of approximately eight (±8) feet above ground. The proposed overhead electric utility poles required for interconnection with the existing distribution system on Thompson Road (CT 193) would be the tallest new features introduced as a result of development of the Facility (at 35 to 40 feet high). The proposed agricultural storage barn would be approximately 15 feet tall. Some views of the Facility may be possible from Interstate 395 but otherwise the Project is set

[8] State of Connecticut Noise Control regulations establish a nighttime criterion of 45 dBA.

back sufficiently from abutting properties and other roads and is benefited by intervening vegetation, so that the Facility components will not be visible from most locations off the Site.

Conclusion

As demonstrated in this EA, the Project will comply with CTDEEP air and water quality standards. Further, it will not have an undue adverse effect on the existing environment and ecology, nor would it affect the scenic, historic and recreational resources in the vicinity. The majority of the Project Area has been heavily disturbed and currently holds minimal habitat value. Once operative the Facility will be unstaffed and generate minimal traffic. The Project design minimizes the creation of impervious surfaces and stormwater generated by the proposed development will be handled and treated in a manner consistent with the 2004 *Connecticut Stormwater Manual*.

APPENDIX A

Wetland Boundary Review Report

and

Photo-Documentation

WETLAND BOUNDARY REVIEW

June 30, 2016 **APT Project No.: CT481111**

Prepared For: C-TEC SOLAR, LLC
1 Griffin Road South, Suite 200
Bloomfield, CT 06002

Project Name: C-TEC SOLAR Thompson

Site Address: 1 Ballard Road
Thompson, Connecticut

Wetland Boundary Review Performed On: February 26, 2016

Wetlands Identified on Subject Property:	Yes ☒ No ☐	
Work Proposed in Wetland Resource Area:	Wetland ☐ Watercourse ☐ Buffer Zone ☒ None ☒	
Previous Delineation Performed By:	Mike Schaffer and field located by Messier & Associates, Inc.	Date: 1998
Existing Conditions Survey Plan Prepared By:	Messier & Associates, Inc.	Date: 5/27/2015
Municipal Buffer Zone:	**Wetlands:** 100 feet	**Watercourses:** 100 feet

Conclusion/Recommendation:

The wetland boundaries previously delineated on the subject property were field reviewed and found to be substantially correct and did not include any wetland resource area omissions. The one exception to this was a small area in the northern portion of the property identified as an intermittent watercourse feature. It was determined that this feature was exclusively associated with stormwater runoff from State Route 193 (via culvert outfall) and therefore did not meet the criteria for an intermittent watercourse or a wetland. As a result, one revision to the wetland boundaries depicted on the referenced existing conditions survey plan was required to removal this regulated feature.

This document is provided as a review of a previous wetland delineation. This analysis is based on a field review of wetland boundary survey flags relying upon the referenced existing conditions survey plan and wetland delineation report (if available) to determine if the previous wetland delineation is substantially correct, does not include ommissions of undelineated wetland resource areas and the existing conditions survey plan generally represents the locations of wetland jurisdictional boundaries on the subject property.

The wetland boundary review was performed by*:

Dean Gustafson

Dean Gustafson, Professional Soil Scientist

Enclosures

** All established wetlands boundary lines are subject to change until officially adopted by local, state, or federal regulatory agencies.*

Attachments

- Wetland Inspection Field Forms
- Wetland Inspection Map

Wetland Delineation Field Form

Wetland I.D.:	Wetland 1	
Flag #'s:	WF 1B to 77B, 1D to 89D, and 1C to 10C	
Flag Location Method:	Existing Conditions Survey ☒	GPS (sub-meter) located ☐

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☒	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: None		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☒	Disturbed ☐	Wet Meadow ☒
Comments: None		

WATERCOURSE TYPE:

Perennial ☒	Intermittent ☐	Tidal ☐
Watercourse Name: Little Mountain Brook		
Comments: Little Mountain Brook is a smaller perennial stream which is 3 to 4 feet wide and 18 to 20 inches deep with a sandy bottom. Existing wetland crossing for access road to site from Thompson Road consists of twin 48 inch reinforced concrete pipe culverts.		

Wetland Delineation Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☒ No ☐ Potential ☐	Other ☐
Vernal Pool Habitat Type: 'Classic'	
Comments: An isolated wetland pocket located in the western end of the delineated resource (WF 1C/10C) was found to support vernal pool breeding habitat. This depressional area receives floodwaters from Little Mountain Brook along with groundwater discharge. This vernal pool was found to contain wood frog (Rana sylvatica) and spotted salamander (Ambystoma maculatum) egg masses and adults.	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐
If no, describe field identified soils		

DOMINANT PLANTS:

Red Maple (Acer rubrum)	Specked Alder (Alnus rugosa)
Bebb Willow (Salix bebbiana)	Highbush Blueberry (Vaccinium corymbosum)
Multiflora Rose* (Rosa multiflora)	Sensitive Fern (Onoclea sensibilis)
Cinnamon Fern (Osmunda cinnamomea)	Tussock Sedge (Carex stricta)
Marsh Marigold (Caltha palustris)	Broad-Leaf Cattail (Typha latifolia)

* denotes Connecticut Invasive Species Council invasive plant species

GENERAL COMMENTS:

C-TEC SOLAR is proposing to install an approximately 3.752 megawatt solar-based electrical generating facility at 1 Ballard Road in Thompson, CT. The facility would generally be located within an old field area adjacent to two wetland systems (Wetlands 1 and 2). Access would be off Thompson Road via an existing gravel access road that crosses Wetland 1 (existing crossing consisting of twin 48" reinforced concrete pipes). Wetland 1 occurs in proximity to the north side of the proposed solar facility, just west of the wetland crossing. The nearest location to the proposed solar facility is approximately 40 feet south of Wetland 1.

The wetland delineation reviewed was originally completed by Mike Shaffer in 1998. This delineation was reviewed by APT and found to be substantially correct.

Wetland 1 consists of a riparian corridor associated with a perennial stream identified as Little Mountain Brook. The dominant vegetation class of this wetland system is forested with interior areas of emergent habitats. Eastern and western extents of the system consist of well-defined perennial stream with incised banks and bordering wetlands. Central portions of the wetland consist of broad emergent wetland areas with diffuse braided stream complexes. The northeast corner of Wetland 1 consists of emergent/wet meadow habitat dominated by reeds, grasses and ferns. Scrub/shrub habitats provide transitional ecotones to the forested interior of Wetland 1. In the far southwest corner of Wetland 1 a backwater depression disconnected from the Little Mountain Brook was observed to support vernal pool breeding habitat. A ±12-foot wide existing gravel access road crosses Wetland 1 in the eastern extents conveying flows via twin 48" diameter reinforced concrete pipe culverts. Generally, northern edges of this wetland system consist of broad transitional wetland areas while southern edges consist of steeply sloping banks. This wetland drains west and eventually converges with Quinnatisset Brook (Wetland 2) draining into the Quinebaug River. Soils are dominated by a complex of glaciofluvial material and alluvial deposits. Western extents of this stream system have experienced substantial flooding resulting in large open backwater areas as a function of downstream beaver activity.

Wetland Delineation Field Form

Wetland I.D.:	Wetland 2	
Flag #'s:	WF 35 to 61E	
Flag Location Method:	Existing Conditions Survey ☒	GPS (sub-meter) located ☒

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☒	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: flooding in western portion of wetland resulting from downstream beaver activity		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☒	Intermittent ☐	Tidal ☐
Watercourse Name: Quinnatisset Brook		
Comments: The Quinnatisset River is located on the south side of the proposed solar facility and is an 8- to 10-foot-wide channel with a sandy, cobble bottom and 3 feet deep at bank full stage.		

Wetland Delineation Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☒	Other ☐
Vernal Pool Habitat Type: None	
Comments: N/A	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐
If no, describe field identified soils		

DOMINANT PLANTS:

Red Oak (Quercus rubra)	Red Maple (Acer rubrum)
Silky Dogwood (Cornus amomum)	Multiflora Rose* (Rosa multiflora)
Fox Grape (Vitis labrusca)	Winterberry (Ilex verticillata)
Highbush Blueberry (Vaccinium corymbosum)	Tussock Sedge (Carex stricta)
Skunk Cabbage (Symplocarpus foetidus)	Cinnamon Fern (Osmunda cinnamomea)
Eastern White Pine (Pinus strobus)	Black Oak (Quercus velutina)
Eastern Hemlock (Tsuga canadensis)	

* denotes Connecticut Invasive Species Council invasive plant species

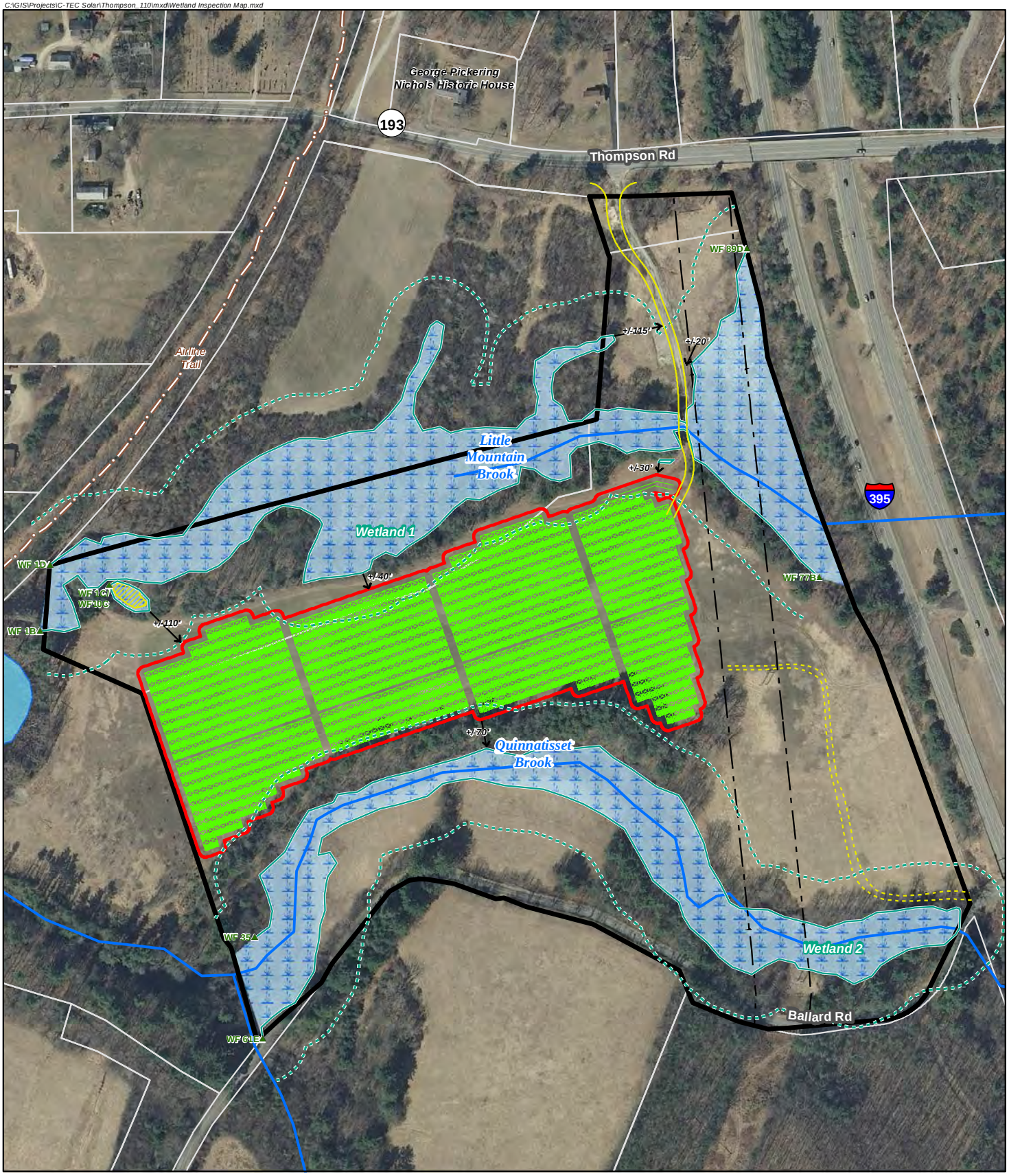
GENERAL COMMENTS:

C-TEC SOLAR is proposing to install an approximately 3.752 megawatt solar-based electrical generating facility at 1 Ballard Road in Thompson, CT. The facility would generally be located within an old field area adjacent to two wetland systems (Wetland 1 and 2). Wetland 2 occurs in proximity to the proposed solar facility located approximately 70 feet to the south.

The delineation reviewed was originally completed by Mike Shaffer in 1998. This delineation was reviewed by APT and found to be substantially correct.

Wetland 2 consists of a riparian corridor associated with a perennial stream identified as Quinnatisset Brook. The dominant vegetation class of this wetland system is forested with some edge scrub/shrub habitat. The entirety of the system consists of a well-defined perennial stream with incised banks and bordering wetlands. In particular, the northern edge of this wetland consists of steeply sloping upland forested areas. Western extents of this stream system have experienced substantial flooding resulting in large open shallow backwater areas as a result of downstream beaver activity. This wetland drains west and eventually converges with Little Mountain Brook (Wetland 1) draining into the Quinebaug River. Soils are dominated by a complex of glaciofluvial material and alluvial deposits.

C:\GIS\Projects\C-TEC Solar\Thompson_110\mxd\Wetland Inspection Map.mxd



Legend

- Site Boundary
- Ground Mounted Facility
- Solar Module Array
- Access to Facility
- Utility Right-of-Way
- Path
- Trail
- Approximate Assessor Parcel Boundary (CTDEEP)
- CTDEEP Watercourse
- CTDEEP Open Water
- Start/End Wetland Flag
- Wetland Boundary
- 100' Wetland Buffer
- Wetland Area
- Vernal Pool

Wetland Inspection Map

Proposed Solar Project
1 Ballard Road
Thompson, Connecticut

Map Notes:
Base Map Source: 2012 Aerial Photograph (CTECO)
Map Scale: 1 inch = 300 feet *Map Date: June 2016*

N W E S

300 150 0 300 Feet

C-TECSOLAR

ALL-POINTS TECHNOLOGY CORPORATION

APPENDIX B

CTDEEP NDDB Review Letter

Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

June 6, 2016

Dean Gustafson
All-Points Technology Corporation, P.C.
3 Saddlebrook Drive
Killingworth, CT 06419
dgustafson@allpointstech.com

Project: Installation of Solar-Based Electric Generating Facility with Approximately 12 Acres of Arrays for C-TEC Thompson Solar Located at 1 Ballard Road in Thompson
NDDB Determination No.: 201606676

Dear Dean Gustafson,

I have reviewed Natural Diversity Data Base (NDDB) maps and files regarding the area delineated on the map provided for the proposed Installation of Solar-Based Electric Generating Facility with Approximately 12 acres of arrays for C-TEC Thompson Solar Located at 1 Ballard Road in Thompson, Connecticut. I do not anticipate negative impacts to State-listed species (RCSA Sec. 26-306) resulting from your proposed activity at the site based upon the information contained within the NDDB. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits. This determination is good for one year. Please re-submit an NDDB Request for Review if the scope of work changes or if work has not begun on this project by June 6, 2017.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at (860) 424-3592, or dawn.mckay@ct.gov . Thank you for consulting the Natural Diversity Data Base.

Sincerely,

Dawn M. McKay

Dawn M. McKay
Environmental Analyst 3

APPENDIX C

State Historic Preservation Office Submission

Submit by Email | Print Form

Department of Economic and Community Development

Connecticut still revolutionary

State Historic Preservation Office

One Constitution Plaza | Hartford, CT 06103 | 860.256.2800 | Cultureandtourism.org

PROJECT REVIEW COVER FORM

1. This information relates to a previously submitted project. ☐ You do not need to complete the rest of the form if you have been previously issued a SHPO Project Number. Please attach information to this form and submit.

SHPO Project Number _____
(Not all previously submitted projects will have project numbers)

Project Address _____
(Street Address and City or Town)

2. This is a new Project. ☒ If you have checked this box, it is necessary to complete ALL entries on this form .

Project Name C-TEC Solar - Thompson

Project Location 1 Ballard Road
Include street number, street name, and or Route Number. If no street address exists give closest intersection.

City or Town Thompson
In addition to the village or hamlet name (if appropriate), the municipality must be included here.

County Windham County
If the undertaking includes multiple addresses, please attach a list to this form.

Date of Construction (for existing structures) N/A Vacant Land

PROJECT DESCRIPTION SUMMARY (include full description in attachment):
C-TEC Solar proposes to construct a solar facility with +/- 12 acres of PV arrays on property located at 1 Ballard Road, in Thompson, CT. The project area is a former agricultural field that was previously mined of sand and gravel deposits. An existing gravel road provides access to the project area from Thompson Road (Rte 193) to the north.

TYPE OF REVIEW REQUESTED

a. Does this undertaking involve funding or permit approval from a State or Federal Agency?

☒ Yes ☐ No

Agency Name/Contact	Type of Permit/Approval	State	Federal
CT Siting Council	Petition that NO Certificate of	☒	☐
	Environmental Compatibility and	☐	☐
	Public Need is required.	☐	☐

	Yes	No
b. Have you consulted the SHPO and UCONN Dodd Center files to determine the presence or absence of previously identified cultural resources within or adjacent to the project area?	☒	☐
If yes: Was the project site wholly or partially located within an identified archeologically sensitive area?	☐	☒
Does the project site involve or is it substantially contiguous to a property listed or recommended for listing in the CT State or National Registers of Historic Places?	☐	☒
Does the project involve the rehabilitation, renovation, relocation, demolition or addition to any building or structure that is 50 years old or older?	☐	☒

Department of Economic and Community Development

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PROJECT REVIEW COVER FORM

The Historic Preservation Review Process in Connecticut Cultural Resource Review under the National Historic Preservation Act – Section 106 http://www.achp.gov/106summary.html involves providing technical guidance and professional advice on the potential impact of publicly funded, assisted, licensed or permitted projects on the state's historic, architectural and archaeological resources. This responsibility of the State Historic Preservation Office (SHPO) is discharged in two steps: (1) identification of significant historic, architectural and archaeological resources; and (2) advisory assistance to promote compatibility between new development and preservation of the state's cultural heritage.

Project review is conducted in two stages. First, the SHPO assesses affected properties to determine whether or not they are listed or eligible for listing in the Connecticut State or National Registers of Historic Places. If so, it is deemed "historic" and worthy of protection and the second stage of review is undertaken. The project is reviewed to evaluate its impact on the properties significant materials and character. Where adverse effects are identified, alternatives are explored to avoid, or reduce project impacts; where this is unsuccessful, mitigation measures are developed and formal agreement documents are prepared stipulating these measures. For more information and guidance, please see our website at: http://www.cultureandtourism.org/cct/cwp/view.asp?a=3933&q=293820

ALL PROJECTS SUBMITTED FOR REVIEW MUST INCLUDE THE FOLLOWING MATERIALS*:

☒ **PROJECT DESCRIPTION** Please attach a full description of the work that will be undertaken as a result of this project. Portions of environmental statements or project applications may be included. The project boundary of the project should be clearly defined**

☒ **PROJECT MAP** This should include the precise location of the project – preferably a clear color image showing the nearest streets or roadways as well as all portions of the project. Tax maps, Sanborn maps and USGS quadrangle maps are all acceptable, but Bing and Google Earth are also accepted if the information provided is clear and well labeled. The project boundary should be clearly defined on the map and affected legal parcels should be identified.

☒ **PHOTOGRAPHS** Clear, current images of the property should be submitted. Black and white photocopies will not be accepted. Include images of the areas where the proposed work will take place. May require: exterior elevations, detailed photos of elements to be repaired/replaced (windows, doors, porches, etc.) All photos should be clearly labeled.

For Existing Structures	Yes	N/A	Comments
Property Card	☐	☐	
For New Construction	**Yes**	**N/A**	**Comments**
Project plans or limits of construction (if available)	☒	☐	
If project is located in a Historic District include renderings or elevation drawings of the proposed structure	☐	☒	
Soils Maps http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm	☒	☐	
Historic Maps http://magic.lib.uconn.edu/	☒	☐	
For non-building-related projects (dams, culverts, bridge repair, etc)	**Yes**	**N/S**	**Comments**
Property Card	☐	☐	
Soils Map (see above)	☐	☐	
Historic Maps (see above)			

SHPO USEONLY	Above	Date	Below	Date
Indicate date of Review and Initials of Reviewer				

PROJECT CONTACT

Name Nicole Castro Title Project Manager

Firm/Agency All-Points Technology Corporation, P.C.

Address 3 Saddlebrook Drive

City Killingworth State CT Zip 06419

Phone 860-663-1697 x213 Cell Fax 860-663-0935

Email ncastro@allpointstech.com

*Note that he SHPO's ability to complete a timely project review depends largely on the quality of the materials submitted.

** Please be sure to include the project name and location on *each page* of your submission.

Department of Economic and Community Development

Connecticut
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State Historic Preservation Office

One Constitution Plaza | Hartford, CT 06103 | 860.256.2800 | Cultureandtourism.org

PROJECT REVIEW COVER FORM

SHPO USE ONLY

Based on our review of the information provided to the State Historic Preservation Office, it is our opinion that:

☒ No historic properties will be affected by this project. No further review is requested.

C-TEC Solar, 1 Ballard Rd., Thompson

☐ This project will cause no adverse effects to the following historic properties. No further review is requested:

☐ This project will cause no adverse effects to the following historic properties, conditional upon the stipulations included in the attached letter:

☐ Additional information is required to complete our review of this project. Please see the attached letter with our requests and recommendations.

☐ This project will adversely affect historic properties as it is currently designed or proposed. Please see the attached letter for further details and guidance.

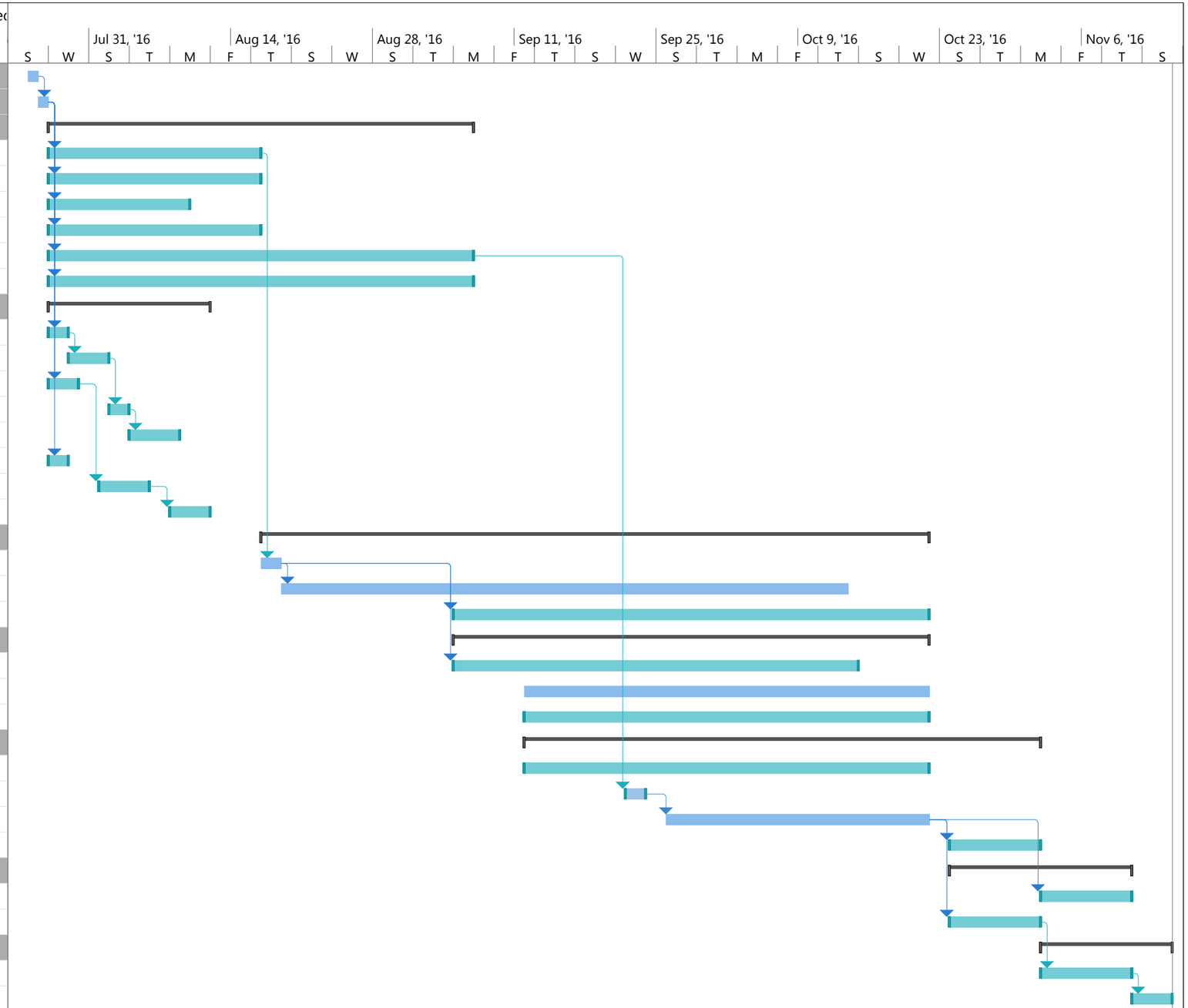
Catherine Labadia
Deputy State Historic Preservation Officer

6/29/16
Date

APPENDIX D

Construction Schedule

ID		Task Name	Duration	Start	Finish	Pred
1		**Siting Council Approval**	**1 day**	**Mon 7/25/16**	**Mon 7/25/16**	
2		**Town Permits Approved**	**1 day**	**Tue 7/26/16**	**Tue 7/26/16**	1
3		**Procurement**	**30 days**	**Wed 7/27/16**	**Tue 9/6/16**	
4		Ground Mount Racking	15 days	Wed 7/27/16	Tue 8/16/16	2
5		Inverters	15 days	Wed 7/27/16	Tue 8/16/16	2
6		Balance of System	10 days	Wed 7/27/16	Tue 8/9/16	2
7		DAS	15 days	Wed 7/27/16	Tue 8/16/16	2
8		Switchgears	30 days	Wed 7/27/16	Tue 9/6/16	2
9		Transformer	30 days	Wed 7/27/16	Tue 9/6/16	2
10		**Site Development**	**12 days**	**Wed 7/27/16**	**Thu 8/11/16**	
11		Access Road Construction / Repair	2 days	Wed 7/27/16	Thu 7/28/16	2
12		Site Staging Area Construction	2 days	Fri 7/29/16	Mon 8/1/16	11
13		Site Erosion Control Installation	3 days	Wed 7/27/16	Fri 7/29/16	2
14		Site Grading and Finishing	2 days	Tue 8/2/16	Wed 8/3/16	12
15		Equipment Pad Construction	3 days	Thu 8/4/16	Mon 8/8/16	14
16		Fence / Gate Construction	2 days	Wed 7/27/16	Thu 7/28/16	2
17		Tree Clearing and Grubbing	5 days	Mon 8/1/16	Fri 8/5/16	13
18		Slope Stabilzation / Plant new vegetation	4 days	Mon 8/8/16	Thu 8/11/16	17
19		**Ground Mount Racking**	**48 days**	**Wed 8/17/16**	**Fri 10/21/16**	
20		Mobilization	2 days	Wed 8/17/16	Thu 8/18/16	4
21		Installation of Racking	40 days	Fri 8/19/16	Thu 10/13/16	20
22		Installation of Modules	35 days	Mon 9/5/16	Fri 10/21/16	20
23		**DC Stringing**	**35 days**	**Mon 9/5/16**	**Fri 10/21/16**	
24		Modules	30 days	Mon 9/5/16	Fri 10/14/16	20
25		Combiner Boxes	30 days	Mon 9/12/16	Fri 10/21/16	
26		Conduit Installation	30 days	Mon 9/12/16	Fri 10/21/16	
27		**AC Wiring**	**37 days**	**Mon 9/12/16**	**Tue 11/1/16**	
28		Hanging Inverters	30 days	Mon 9/12/16	Fri 10/21/16	
29		Place Equipment on Pad	2 days	Thu 9/22/16	Fri 9/23/16	8
30		Wiring From Inverters to Switchgears	20 days	Mon 9/26/16	Fri 10/21/16	29
31		Monitoring Equipment / DAS	7 days	Mon 10/24/16	Tue 11/1/16	30
32		**Inspection**	**14 days**	**Mon 10/24/16**	**Thu 11/10/16**	
33		Authority Having Jurisdiction Inspection	7 days	Wed 11/2/16	Thu 11/10/16	30
34		Utility Inspection	7 days	Mon 10/24/16	Tue 11/1/16	30
35		**Testing / Commissioning**	**9 days**	**Wed 11/2/16**	**Mon 11/14/16**	
36		Utility Approval	7 days	Wed 11/2/16	Thu 11/10/16	34
37		System Energization	2 days	Fri 11/11/16	Mon 11/14/16	36



Project: Simple Project Plan
Date: Tue 6/21/16

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone	

APPENDIX E

Construction Work Hours/Days Letter

Your Family. Your Home. Your Solar.

June 21, 2016

Connecticut Siting Council

10 Franklin Square

New Britain, CT 06051

RE: C-TEC Solar, Inc.'s Petition to the Connecticut Siting Council for Declaratory Ruling: Work Hours on Site

To whom it may concern:

For the construction of the solar array located at 1 Ballard Rd. Thompson, CT, C-TEC Solar plans on working the following hours:

- 0700-1900 hours
- Monday – Sunday
- We will observe Federal Holidays

Best,

Brandon Pizzoferrato

Commercial Project Manager

C-TEC Solar, Inc.

APPENDIX F

Wetland and Vernal Pool Protection Plan

Wetland and Vernal Pool Protection Plan

ALL-POINTS TECHNOLOGY CORPORATION

July 12, 2016

C-TEC Solar,LLC
1 Griffin Road South
Suite 200
Bloomfield, CT 06002

APT Project No.: CT481110

RE: Proposed C-TEC CT Solar Facility
Barrette Farms
1 Ballard Road
Thompson, Connecticut

As a result of the proposed development's location in the vicinity of wetland resources and vernal pool habitat, the following Best Management Practices ("BMPs") are recommended to avoid unintentional impacts to proximate wetland resources or mortality to vernal pool herpetofauna (i.e., spotted salamander, wood frog, turtles, etc.) during construction activities. The vernal pool specific BMPs would be implemented should construction activities occur during peak amphibian movement periods (early spring breeding [March 1st to May 15th] and late summer dispersal [July 15th to September 15th]). BMP's associated with the protection of wetlands (including sections 1a, 1c, 1d, 2a, 2d, 3a, 3b, 3c, 4b, 4c, 5a, and 6a) will be implemented regardless of the time of year. The recommended BMPs will be included on construction drawings should the site be approved by the Connecticut Siting Council.

A qualified professional from APT would serve as the Environmental Monitor for this project to ensure that these protection measures are implemented properly. The proposed wetland and vernal pool protection program consists of several components including: isolation of the project perimeter; periodic inspection and maintenance of isolation structures; herpetofauna sweeps; education of all contractors and sub-contractors prior to initiation of work on the site; protective measures; and, reporting.

1. Erosion and Sedimentation Controls

a. Plastic netting used in a variety of erosion control products (i.e., erosion control blankets, fiber rolls [wattles], reinforced silt fence) has been found to entangle wildlife, including reptiles, amphibians, birds and small mammals. No permanent erosion control products or reinforced silt fence will be used on the project. Temporary erosion control products that will be exposed at the ground surface and represent a potential for wildlife entanglement will use either erosion control blankets and fiber rolls composed of processed fibers mechanically bound together to form a continuous matrix (netless) or netting composed of planar woven natural biodegradable fiber to avoid/minimize wildlife entanglement.

b. Installation of erosion and sedimentation controls, required for erosion control compliance and creation of a barrier too possible migrating/dispersing herpetofauna (only applicable during the seasonal restriction period and will be installed at the discretion of the Environmental Monitor), shall be performed by the Contractor if any soil disturbance occurs or heavy machinery is anticipated to be used on slopes. The

Environmental Monitor will inspect the work zone area prior to and following erosion control barrier installation. In addition, work zones in proximity to vernal pool resources will be inspected prior to and following erosion control barrier installation to ensure the area is free of herpetofauna and satisfactorily installed. The intent of the barrier is to segregate the majority of the work zone from migrating/dispersing herpetofauna. Oftentimes complete isolation of a work zone is not feasible due to accessibility needs and locations of staging/material storage areas, etc. In those circumstances, the barriers will be positioned to deflect migrating/dispersal routes away from the work zone to minimize potential encounters with herpetofauna at the discretion of the Environmental Monitor.

c. No equipment, vehicles or construction materials shall be stored within 100 feet of wetland resources.

d. All silt fencing or other potential barriers to safe herpetofauna migration shall be removed within 30 days of completion of work and permanent stabilization of site soils so that reptile and amphibian movement between uplands and wetlands is not restricted.

2. Contractor Education:

a. Prior to work on site and initial deployment/mobilization of equipment and materials, the Contractor shall attend an educational session at the pre-construction meeting with APT. This orientation and educational session will consist of information such as, but not limited to: identification of wetland resources proximate to work areas, representative photographs of typical herpetofauna that may be encountered, Connecticut and Federal listing status of species that could be encountered, typical species behavior, and proper procedures if species are encountered. The meeting will further emphasize the non-aggressive nature of these species, the absence of need to destroy such animals and the need to follow Protective Measures as described in Section 4 below. The Contractor will designate one of its workers as the "Project Monitor", who will receive more intense training on the identification and protection of herpetofauna.

b. The Contractor will designate a member of its crew as the Project Monitor to be responsible for the periodic "sweeps" for herpetofauna within the construction zone each morning, during any and all transportation of vehicles along the access drive, and for any ground disturbance work. This individual will receive more intense training from APT on the identification and protection of herpetofauna in order to perform sweeps during large vehicle/equipment movements. This sweep will include an escort by the Project Monitor for large vehicle/equipment movements and include visual inspection of the work area for any herpetofauna along the existing paved access drive. Any herpetofauna discovered would be translocated outside the work zone in the general direction the animal was oriented.

c. The Contractor's Project Monitor will be provided with cell phone and email contacts for APT personnel to immediately report any encounters with herpetofauna. Educational poster materials will be provided by APT and displayed on the job site to maintain worker awareness as the project progresses.

d. APT will also post Caution Signs throughout the project site for the duration of the construction project providing notice of the environmentally sensitive nature of the work area, the potential for encountering various amphibians and reptiles and precautions to be taken to avoid injury to or mortality of these animals.

3. Petroleum Materials Storage and Spill Prevention

a. Certain precautions are necessary to store petroleum materials, refuel and contain and properly clean up any inadvertent fuel or petroleum (i.e., oil, hydraulic fluid, etc.) spill due to the project's location in proximity to wetland resources.

b. A spill containment kit consisting of a sufficient supply of absorbent pads and absorbent material will be maintained by the Contractor at the construction site throughout the duration of the project. In addition, a waste drum will be kept on site to contain any used absorbent pads/material for proper and timely disposal off site in accordance with applicable local, state and federal laws.

c. The following petroleum and hazardous materials storage and refueling restrictions and spill response procedures will be adhered to by the Contractor.

    i. Petroleum and Hazardous Materials Storage and Refueling
        1. Refueling of vehicles or machinery shall occur a minimum of 100 feet from wetlands or watercourses and shall take place on an impervious pad with secondary containment designed to contain fuels.
        2. Any fuel or hazardous materials that must be kept on site shall be stored on an impervious surface utilizing secondary containment a minimum of 100 feet from wetlands or watercourses.

    ii. Initial Spill Response Procedures
        1. Stop operations and shut off equipment.
        2. Remove any sources of spark or flame.
        3. Contain the source of the spill.
        4. Determine the approximate volume of the spill.
        5. Identify the location of natural flow paths to prevent the release of the spill to sensitive nearby waterways or wetlands.
        6. Ensure that fellow workers are notified of the spill.

    iii. Spill Clean Up & Containment
        1. Obtain spill response materials from the on-site spill response kit. Place absorbent materials directly on the release area.
        2. Limit the spread of the spill by placing absorbent materials around the perimeter of the spill.
        3. Isolate and eliminate the spill source.
        4. Contact the appropriate local, state and/or federal agencies, as necessary.
        5. Contact a disposal company to properly dispose of contaminated materials.

    iv. Reporting
        1. Complete an incident report.
        2. Submit a completed incident report to the Connecticut Siting Council.

4. Protective Measures

a. A thorough cover search of the construction area will be performed by APT's Environmental Monitor for herpetofauna prior to and following installation of the silt fencing barrier to remove any species from the work zone prior to the initiation of construction activities. APT's Environmental Monitor will also sweep the existing paved access drive in advance of the Contractor's initial mobilization of equipment and materials to the Subject Property. Any herpetofauna discovered would be translocated outside the work zone in the general direction the animal was oriented. Periodic inspections will be performed by APT's Environmental Monitor throughout the duration of the construction.

b. Any stormwater management features, ruts or artificial depressions that could hold water created intentionally or unintentionally by site clearing/construction activities

will be properly filled in and permanently stabilized with vegetation to avoid the creation of vernal pool "decoy pools" that could intercept amphibians moving toward the vernal pools. Stormwater management features such as level spreaders will be carefully reviewed in the field to ensure that standing water does not endure for more than a 24-hour period to avoid creation of decoy pools and may be subject to field design changes. Any such proposed design changes will be reviewed by the design engineer to ensure stormwater management functions are maintained.

c. Erosion control measures will be removed no later than 30 days following final site stabilization so as not to impede migration of herpetofauna or other wildlife.

5. Herbicide and Pesticide Restrictions

a. Contractors will avoid the use of herbicides and pesticides at the facility.

6. Reporting

a. Monthly inspection reports (brief narrative and applicable photos) will be submitted to the Connecticut Siting Council for compliance verification. Any observations of herpetofauna will be included in the reports. Any observations of rare species will be reported to the Connecticut Department of Energy & Environmental Protection Natural Diversity Data Base.

APPENDIX G

ESA Compliance Determination

ESA Compliance Determination

June 27, 2016 **APT Project No.: CT481111**

C-TEC Solar, LLC
1 Griffin Road South, Suite 200
Bloomfield, CT 06002

Attn: Brandon Pizzoferrato

Re: Proposed C-TEC Solar CT Facility
Barrett Farms
1 Ballard Road
Thompson, Connecticut

Dear Mr. Pizzoferrato,

On behalf of C-TEC Solar, LLC ("C-TEC"), All-Points Technology Corporation, P.C. ("APT") performed an evaluation with respect to possible Federally-listed, threatened or endangered species in order to determine if the proposed referenced solar-based electric generating facility ("Facility") would result in a potential adverse effect to Federally-listed species. APT understands through C-TEC that the referenced Facility has no Federal nexus. As a result, this consultation was completed in accordance with Section 10 of the Endangered Species Act ("ESA") through initial consultation with the U.S. Fish and Wildlife Service's ("USFWS") Information, Planning, and Conservation System ("IPaC")[1] for the proposed Facility.

Northern Long-eared Bat

One federally-listed[2] threatened species is known to occur in the vicinity of the Facility documented as the northern long-eared bat ("NLEB"; *Myotis septentrionalis*). A copy of the IPaC report is enclosed as Attachment 1. Northern long-eared bat's range encompasses the entire State of Connecticut. Suitable northern long-eared bat roost habitat includes trees (live, dying, dead, or snag) with a diameter at breast height ("DBH") of three inches or greater. The proposed activity will result in the clearing of trees greater than three inches DBH. Therefore, since NLEB potentially occurs in the vicinity of the Site, the Site supports potential habitat for NLEB and the proposed activity may potentially impact its habitat, a determination of compliance with Section 10 of the ESA is required.

As a result of this preliminary finding and in accordance with the Final 4(d) Rule for NLEB[3] under the ESA, the following assessment is provided to determine if the planned activity may cause prohibited take of NLEB. This assessment follows the USFWS's *Key to the Northern Long-Eared Bat 4(d) Rule for Non-Federal Activities Key* ("USFWS Key"; January 13, 2016), as detailed below.

[1] IPaC Consultation Tracking Number: 05E1NE00-2016-SLI-1285, dated April 21, 2016

[2] Listing under the federal Endangered Species Act

[3] Effective February 16, 2016

1. *Will your activity purposefully take (see Definitions below) northern long-eared bats? For example, are you removing bats from a human structure or capturing bats for research?*

   Response: No, the proposed activity does not include purposefully taking northern long-eared bats. Continue to #2.

2. *Is your activity located outside the White-nose Syndrome Zone?*

   Response: No, the proposed activity is located inside the white-nose syndrome zone. Continue to #3.

3. *Will your activity take place within a cave or mine where northern long-eared bats hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?*

   Response: No, the proposed activity will not take place within a northern long-eared bat hibernaculum or alter its entrance or environment. Continue to #4.

4. *Will your action involve tree removal[4]?*

   Response: Yes. Continue to #5.

5. *Is your activity the removal of hazardous trees for protection of human life or property?*

   Response: No, the proposed activity is not removing hazardous trees. Continue to #6.

6. *Will your tree removal activities include one or both of the following: 1) removing a northern long-eared bat known occupied maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31; or 2) removing any trees within 0.25 miles of a northern long-eared bat hibernaculum at any time of year?*

   Response: Please refer to the *Northern long-eared bat areas of concern in Connecticut to assist with Federal Endangered Species Act Compliance* map (February 1, 2016) provided in Attachment 2. This map reveals that there are currently no known NLEB maternity roost trees in Connecticut. The nearest NLEB habitat resource to the proposed activity is located in East Granby ±43 miles to the west.

   Therefore, responses to both segments 1 and 2 of #6 are no.

Conclusion

In accordance with the USFWS Key for NLEB, the proposed C-TEC Facility will not likely result in an adverse effect or incidental take[5] to NLEB and does not require a permit from USFWS. Therefore, no further consultation with USFWS is required for the proposed activity.

Please feel free to contact me with any questions by phone at (860) 663-1697 ext. 201 or via email at dgustafson@allpointstech.com.

Sincerely,

Dean Gustafson

Dean Gustafson
Senior Environmental Scientist

Enclosures

[4] "Tree removal" is defined in the 4(d) rule as cutting down, harvesting, destroying, trimming, or manipulating in any other way the trees, saplings, snags, or any other form of woody vegetation likely to be used by northern long-eared bats.

[5] "Incidental take" is defined by the ESA as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." For example, harvesting trees can kill bats that are roosting in the trees, but the purpose of the activity is not to kill bats.

Attachment 1
USFWS IPaC Threatened and Endangered Species Report

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 03301
PHONE: (603)223-2541 FAX: (603)223-0104
URL: www.fws.gov/newengland

Consultation Code: 05E1NE00-2016-SLI-1285 April 21, 2016
Event Code: 05E1NE00-2016-E-01853 Project
Name: C-Tec Solar Thompson

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

Official Species List

Provided by:

New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 03301
(603) 223-2541
http://www.fws.gov/newengland

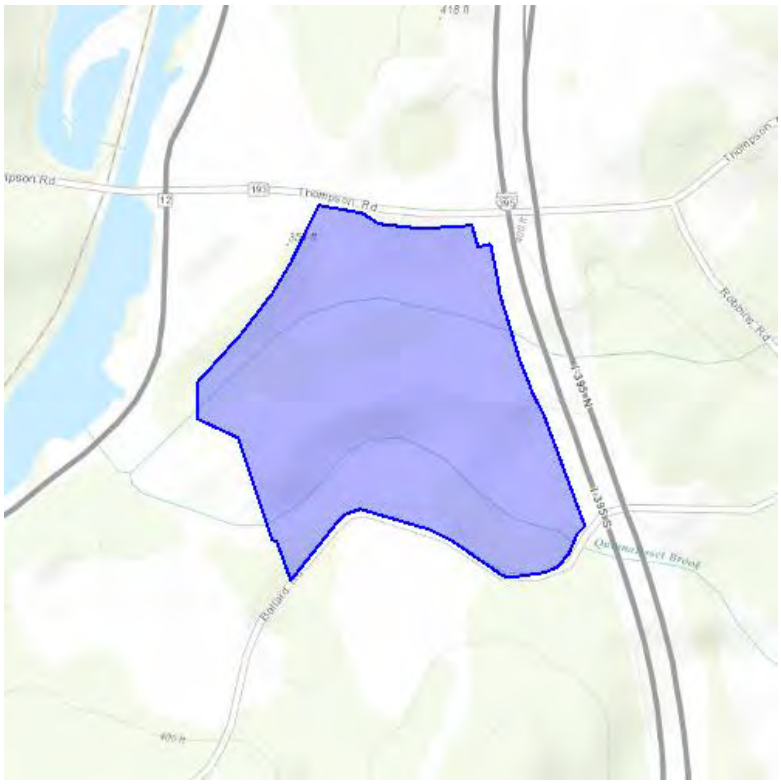
Consultation Code: 05E1NE00-2016-SLI-1285
Event Code: 05E1NE00-2016-E-01853

Project Type: POWER GENERATION

Project Name: C-Tec Solar Thompson
Project Description: C-Tec Solar proposes to construct a fenced solar facility with +/- 8 acres of arrays and a 8 foot by 12 foot shed on property located at 1 Ballard Road, Thompson, Connecticut. The subject property is an old agricultural farm and consists of a vacant field surrounded by an upland forest area. The area for the proposed project is currently dominated by a mixture of cool summer grasses. The Quinnatisset River flows on the south side of the solar facility with a forested upland on south facing north slope to a stream. The forest area is dominated by Eastern White Pines, Eastern Hemlocks, Black Oak and Red Oak trees. The existing gravel driveway off Thompson Road (Connecticut Route 193) will be used as the access road to the solar facility.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

Project Location Map:



Project Coordinates: The coordinates are too numerous to display here.

Project Counties: Windham, CT

Endangered Species Act Species List

There are a total of 1 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

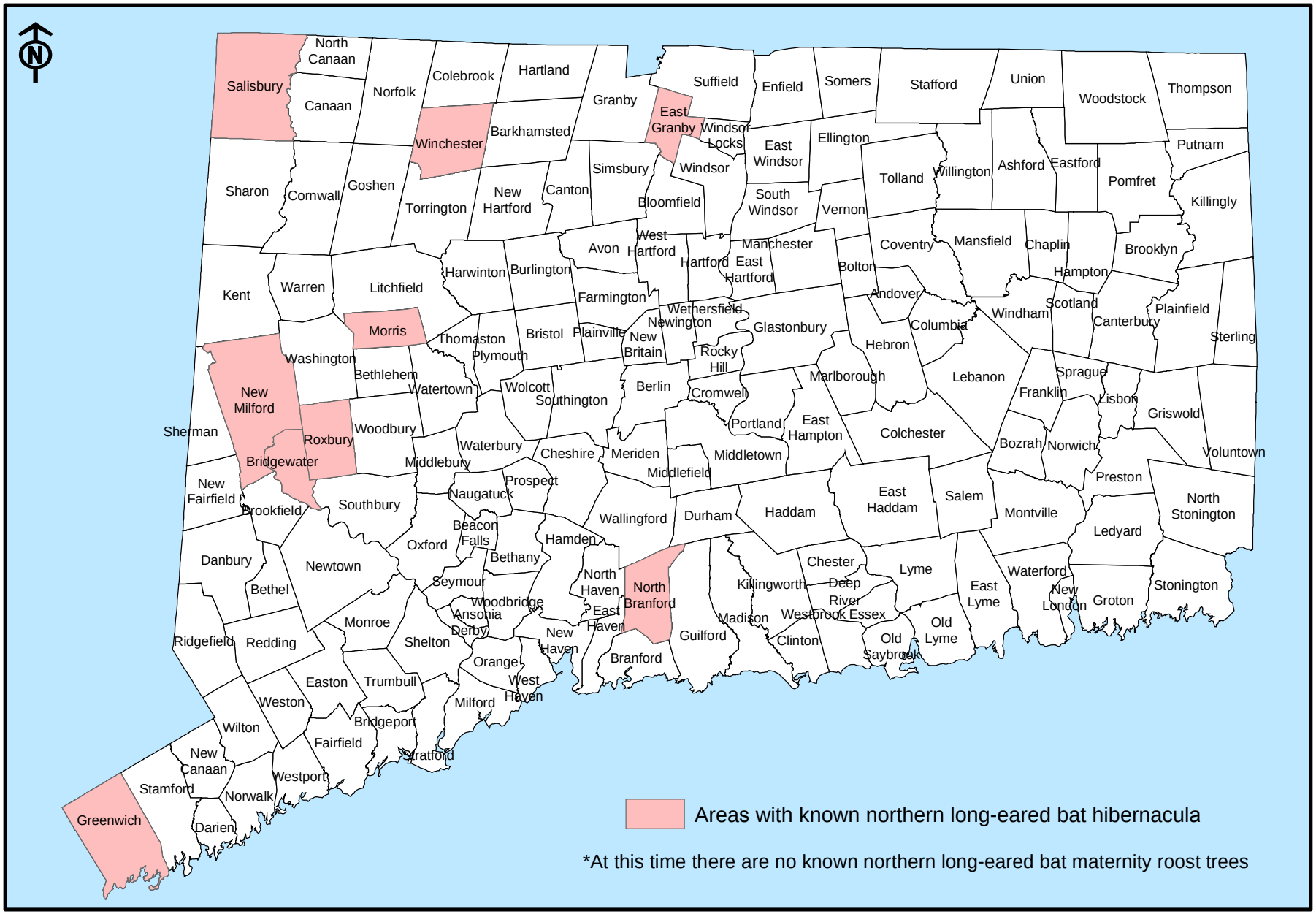
Mammals	Status	Has Critical Habitat	Condition(s)
Northern long-eared Bat *(Myotis septentrionalis)*	Threatened		

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Attachment 2
Northern long-eared bat areas of concern in Connecticut to assist with Federal Endangered Species Act Compliance map

Northern long-eared bat areas of concern in Connecticut to assist with Federal Endangered Species Act Compliance



February 1, 2016

For information on federal requirements visit http://www.fws.gov/midwest/endangered/mammals/nleb/

Deb Leonardo

From: DEEP Nddbrequest <DEEP.Nddbrequest@ct.gov>
Sent: Friday, March 18, 2016 10:46 AM
To: Dean Gustafson
Cc: Deb Leonardo
Subject: Re: Request for NLEB Hibernaculum & Known Maternity Roost Tree Proximity Habitat Info
Attachments: image001.jpg

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Dean

Dean,

Yes. I can confirm that this information is publically available on the published map on the CT NDDB page that shows Connecticut towns that have known bat hibernaculum. Currently CT does not have any known long-eared bat maternity roost trees.

Dawn McKay
Dawn M. McKay
Wildlife Division
Bureau of Natural Resources
Connecticut Department of Energy and Environmental Protection
79 Elm Street, Hartford, CT 06106-5127
P: 860.424.3592 | E: dawn.mckay@ct.gov<mailto:dawn.mckay@ct.gov>

_____

From: Dean Gustafson <dgustafson@allpointstech.com>
Sent: Friday, March 18, 2016 8:13 AM
To: DEEP Nddbrequest
Cc: Deb Leonardo
Subject: Request for NLEB Hibernaculum & Known Maternity Roost Tree Proximity Habitat Info

Good morning Dawn,

The 4(d) Rule Keys (for both Federal Actions and Non-Federal Activities) requires determining if a project is located in proximity to the following northern long-eared bat ("NLEB") habitats (information which is to be provided by CTDEEP NDDB):

* Within 150 feet of a known occupied maternity roost tree; and,

* Within 0.25 mile and 5 miles from a hibernacula.

To minimize project specific requests for NLEB habitat data, please confirm that such information is now publically available in a published map on the NDDB page that shows towns in CT that have known bat hibernaculum and information about maternity colonies/trees. The link is here: http://www.ct.gov/deep/lib/deep/endangered_species/images/nleb_approved2_16.pdf. This map currently states that

"*At this time time there are no known northern long-eared bat maternity roost trees". In addition, NDDB "buffered areas" representing known NLEB hibernaculum locations is included in the current Natural Diversity Data Base Maps.

Thank you,
Dean

Dean E. Gustafson
Senior Environmental Scientist
[cid:image004.jpg@01D09D27.E1152890]
3 Saddlebrook Drive
Killingworth, CT 06419
860.663.1697 ext. 201 (office)
860.984.9515 (mobile)
dgustafson@allpointstech.com<mailto:dgustafson@allpointstech.com>

APPENDIX H

Noise Evaluation Report

HMB

HMB Acoustics LLC 3 Cherry Tree Lane, Avon, CT 06001 860-677-5955

Noise Evaluation Report

Proposed Solar Farm Facility
Barrette Farms
C-TecSolar
1 Ballard Road
Thompson, CT

June 28, 2016

Prepared For:
All-Points Technology Corporation
3 Saddlebrook Drive
Killingworth, CT 06419

Prepared By:
Allan Smardin
HMB Acoustics LLC
3 Cherry Tree Lane
Avon, CT 06001

Introduction

I have reviewed site plans and specifications for equipment that is being proposed for the Barrette Farm Solar facility ("Solar Farm"). The Solar Farm is to be located in an open field north of Ballard Road in Thompson, CT. The specific type, number and locations of the photo-voltaic inverters that will be used at the Solar Farm are still being determined. Therefore, this evaluation is based on a conceptual, "worst-case" scenario by using 100 Sunny Tripower 30000TL-US inverters mounted on the back of racking behind the panels and spaced evenly along the perimeter of the array (40 each on the north and south sides; and 10 each on the east and west sides). The site is bordered by the Quinnatisset Brook and Ballard Road to the south; undeveloped land and I-395 to the east; a portion of the state Airline Trail and Route 12 to the west; and Route 193 to the north. Generally, the areas to the west and south are residential in nature. On June 17, 2016, existing background noise measurements were taken near the proposed site and in adjacent areas. The average levels were 32-37 dBA.

The purpose of this noise evaluation is to determine whether the proposed equipment will comply with the State of CT Noise Regulations. This report and the noise regulations utilize a dBA scale. This scale is used because it closely approximates the response characteristic of the human ear to loudness, and is the scale most commonly used in the measurement of community noise.

Noise Regulations

The State of CT has enacted regulations which limit the amount of noise which may be transferred from one property to another. In pertinent part, the Regulations provide as follows:

Daytime hours - The hours between 7 a.m. and 10 p.m. local time.

Nighttime hours - The hours between 10 p.m. and 7 a.m. local time.

The allowable noise level from a Class “B” Commercial Noise Zone Emitter to a Class “A” Residential Zone Receptor’s property line is 55 dBA (daytime) and 45 dBA (nighttime). (Sec. 22a-69-1.1 (h&n)). The allowable noise level from a Class “B” Commercial Zone Emitter to a Class “B” Commercial Zone Receptor is 62 dBA (day / night). (Sec. 22a-69-3.5(b))

Noise Evaluation

The noise levels listed in TABLE 1 take into account the effect of acoustical shielding provided by other structures on the premises. The noise levels have been projected to the nearest property lines in the directions listed.

TABLE 1

Direction	dBA Level	
North	45	The George Pickering Nichols Historic House (Thompson Road. - Route-193) (Residential)
Northeast	43	I-395 plus wooded area.
East	40	Ballard Road - plus wooded area
Southeast	28	Quinnatisset Country Club - Commercial.
South	39	Residential
Southwest	36	Residential
West	40	Route 12 - wooded area and a pond
Northwest	43	Intersection of Thompson Road - and Airline Trail (Residential)

Noise Evaluation Results

The noise level data in TABLE 1 demonstrates that even when using a worst case scenario, the noise levels at the proposed Solar Farm would meet the conditions for compliance as set forth in the State of CT Noise Regulations at Residential and Commercial property line noise zones.

Stormwater Management Report

SOLAR FACILITY INSTALLATION
"BARRETTE FARMS"
Thompson, Connecticut

1 Ballard Road
Thompson, Connecticut

Prepared for Submission to:
The Connecticut Siting Council

Submission Date: July 2016

Prepared by:
All-Points Technology Corporation, P.C.
3 Saddlebrook Drive
Killingworth, Connecticut 06450
Phone: (860) 663-1697 Fax: (860) 663-0935

Commissioned by:
C-TEC SOLAR
1 Griffin Road South, Suite 200
Bloomfield, CT 06002

Table of Contents

Appendices

Existing Site Conditions

General Site Information
C-TEC SOLAR (C-TEC) is proposing to develop a new Solar Panel Facility on a privately owned property located at 1 Bollard Road in Thompson, Connecticut (see Appendix A). The existing undeveloped site is 49.3± acres, consisting of pasture, woods, and wetland areas. The zoning designation of the lot is I-Zone (Industrial Zone). The existing lot abuts Thompson Road (Route 193) and an undeveloped lot to the north, Interstate 395 to the east, undeveloped lots to the west, and Ballard Road to the south. An electrical transmission line right of way is located on the east side of the property. The subject site is located within Zone C and Zone A designated flood rate areas (see Appendix B).

The proposed site consists of one development area, located within the center of the property. The development area is approximately 10.75± acres. The area is currently pasture areas. To enable the development of the facility, 14.14± acres would require some level of disturbance including the reconstruction of a gravel access drive and the installation of an infiltration basin and electrical facilities.

There are two wetlands areas located on the site, both consisting of riparian corridors associated with Little Mountain Brook (Wetland 1) and Quinnatisset Brook (Wetland 2)

Existing Soils
The site development areas are underlain by four soil types: Hinckley Loamy sand, 0-3 percent slopes; Hinckley loamy sand, 3-15 percent slopes; Hinckley loamy sand, 15-45 percent slopes; and Udorthents-Urban land complex. The three Hickley soils are classified as Hydrological Soil Group A (HSG ”A”) and the Udorthents is classified as Hydrological Soil Group B (HSG ”B”) . See the NRCS Soil Survey located in Appendix C.

Existing Drainage
The site is broken up into 6 drainage areas. Existing Drainage Area #1 (EDA-1) consists of pasture area and drains overland to the existing wetland area to the west of the site. Existing Drainage Area #2 (EDA-2) consists of pasture area and drains overland to the existing wetland area to the south of the site. Existing Drainage Area #3 (EDA-3) consists of pasture area and drains overland to the existing wetland area to the south of the site. Existing Drainage Area #4 (EDA-4) consists of pasture and woodland area and drains overland to the existing wetland area to the north of the site. Existing Drainage Area #5 and #6 (EDA-5, EDA-6) consists of a gravel access drive, pasture and woodland areas and drain overland to the existing wetland area to the north of the site.

A portion of the northern and southern parts of the property reside within a FEMA Flood Zone A, per Flood Insurance Rate Map, # 0901170014B, Panel 14, however the proposed development area does not reside within a FEMA Flood Zone. (See Appendix B).

The six existing drainage areas drain to six separate points of analysis. These six points of analysis are identified in the computations as AP-1 through AP-6. See Appendix D for the Existing Drainage Area Map (EDA-1) and the existing hydrology computations.

Proposed Site Conditions

General Development Information

The proposed development includes the installation of 11,200 ground mounted solar panels with associated equipment and gravel access drives. The areas to be developed are currently pasture areas with existing gravel access drives and will remain so when completed. There will be some clearing on the site with, a majority of the clearing taking place along the southern side of the site. Those areas will be reestablished with low growth erosion control plants. Additionally, some minor clearing will be required for the installation of the infiltration basin and that area will be loamed and seeded. A 12' wide approximately 800 feet long gravel access drive is proposed to be reconstructed from Route 193 to the proposed equipment.

Proposed Drainage

The proposed development activities have been designed to mimic the existing drainage patterns and to match or reduce pre-development peak discharge rates. EDA-5 is the only area where the installation of additional gravel access drive, electrical equipment pad, and storage shed cause an increase in peak discharge rates. As a result an infiltration basin is proposed for this drainage area. The intent of the basin is to capture and infiltrate the runoff. The proposed drainage areas will discharge to the six points of analysis as they do in existing conditions. See Appendix E for the Proposed Drainage Area Map (PDA-1) and hydrologic computations.

EDA-1, EDA-2, EDA-3, EDA-4, and EDA-6 have been renamed PDA-1, PDA-2, PDA-3, PDA-4, and PDA-6 for the proposed conditions. Any disturbance in these areas will be reestablished to pre-development conditions, which consists of existing undisturbed upland area and the proposed southeastern development.

The proposed development activity in EDA-5 splits this drainage area into 2 sub-drainage areas, PDA-5A and PDA-5B. PDA-5A will capture a majority of the disturbed area runoff including the equipment pad, storage shed, and gravel drive which will drain to the proposed grass lined infiltration basin. PDA-5B will consist of remaining area and drain as it does in the existing condition.

The six proposed drainage areas drain to the same six points of analysis discussed previously (AP-1 – AP-4). See Appendix E for the Proposed Drainage Area Map (PDA-1).

Stormwater Management

The infiltration basin has been designed to allow for infiltration of runoff as the primary source of discharge. Utilizing the proposed Best Management Practices (BMPs) for infiltration purposes allows for reductions in both peak flow rates and volume at the analysis point for all major storm events analyzed.

Peak runoff rates and runoff volumes have been computed using the HydroCAD computer program by HydroCAD Software Solutions, LLC. This program uses TR-55 and TR-20 methodology to compute stormwater runoff. Rainfall data utilized in the modeling and analysis was taken from the 2004 Connecticut Stormwater Quality Manual. See Appendix E for the Proposed Drainage Area Map (PDA-1) and the proposed hydrology computations.

The NRCS soil survey indicates that the site is underlain soils classified as HSG “A”. The minimum infiltration rate of 0.3 in/hr was used in the calculations, however based on prior experience with similar soils to those located within the project area the infiltration rate would most likely be higher.

The following tables outline the existing and proposed peak flow rates at each analysis point for all major storm events:

Storm Event	AP-1			AP-2		
	Peak Rate (CFS)		Change (CFS)	Peak Rate (CFS)		Change (CFS)
	Existing	Proposed		Existing	Proposed	
2-Year	0.00	0.00	0.00	0.00	0.00	0.00
10-Year	0.12	0.12	0.00	0.03	0.03	0.00
25-Year	0.38	0.38	0.00	0.09	0.09	0.00
50-Year	0.89	0.89	0.00	0.20	0.20	0.00
100-Year	1.57	1.57	0.00	0.35	0.35	0.00

Storm Event	AP-3			AP-4		
	Peak Rate (CFS)		Change (CFS)	Peak Rate (CFS)		Change (CFS)
	Existing	Proposed		Existing	Proposed	
2-Year	0.00	0.00	0.00	0.00	0.00	0.00
10-Year	0.08	0.08	0.00	0.03	0.03	0.00
25-Year	0.25	0.25	0.00	0.08	0.08	0.00
50-Year	0.56	0.56	0.00	0.21	0.21	0.00
100-Year	1.03	1.03	0.00	0.45	0.45	0.00

Storm Event	AP-5			AP-6		
	Peak Rate (CFS)		Change (CFS)	Peak Rate (CFS)		Change (CFS)
	Existing	Proposed		Existing	Proposed	
2-Year	0.00	0.00	0.00	0.01	0.01	0.00
10-Year	0.01	0.01	0.00	0.26	0.26	0.00
25-Year	0.03	0.02	-0.01	0.69	0.69	0.00
50-Year	0.07	0.07	0.00	1.49	1.49	0.00
100-Year	0.16	0.16	0.00	2.39	2.39	0.00

As shown above, the proposed stormwater BMPs will match or reduce peak runoff rates at all points of analysis.

Water Quality

The 2004 Connecticut Stormwater Quality Manual recommends treating the Water Quality Volume (WQv) or Water Quality Flow (WQF) associated with the runoff from paved surfaces and other surfaces likely to transport sediment and other materials. The WQv is defined as the volume of runoff generated by the initial inch of rain during storm events, while the WQF is the peak flow associated with the water quality volume.

As noted above, the proposed method of treatment for the WQv is the implementation of an infiltration basin to remove the sediments from the runoff while allowing for groundwater infiltration. The proposed infiltration basin has been designed to treat the required WQv for the site and allow the majority of the runoff to infiltrate into the ground and filter out sediments. See Appendix F for the WQv calculations.

Conclusion

As shown herein, the proposed C-TEC SOLAR solar panel facility installation has been designed per the 2004 Connecticut Water Quality Manual requirements. The proposed infiltration basin will match the peak runoff flow rates for all major storm events and also treat the runoff. As a result, the proposed development will not have any adverse conditions to the surrounding areas and properties.

APPENDIX A

USGS Quadrangle Map

ALL-POINTS
TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE
KILLINGWORTH, CT 06419
WWW.ALLPOINTSTECH.COM
PHONE: (860)-663-1697
FAX: (860)-663-0935

APT FILING NUMBER: CT481111	
SCALE: AS NOTED	DRAWN BY: BJP
DATE: JULY 2016	CHECKED BY: SMC

C-TECSOLAR
1 GRIFFIN ROAD
BLOOMFIELD, CT 06002
OFFICE: (860)-580-7174

SOLAR FACILITY INSTALLATION

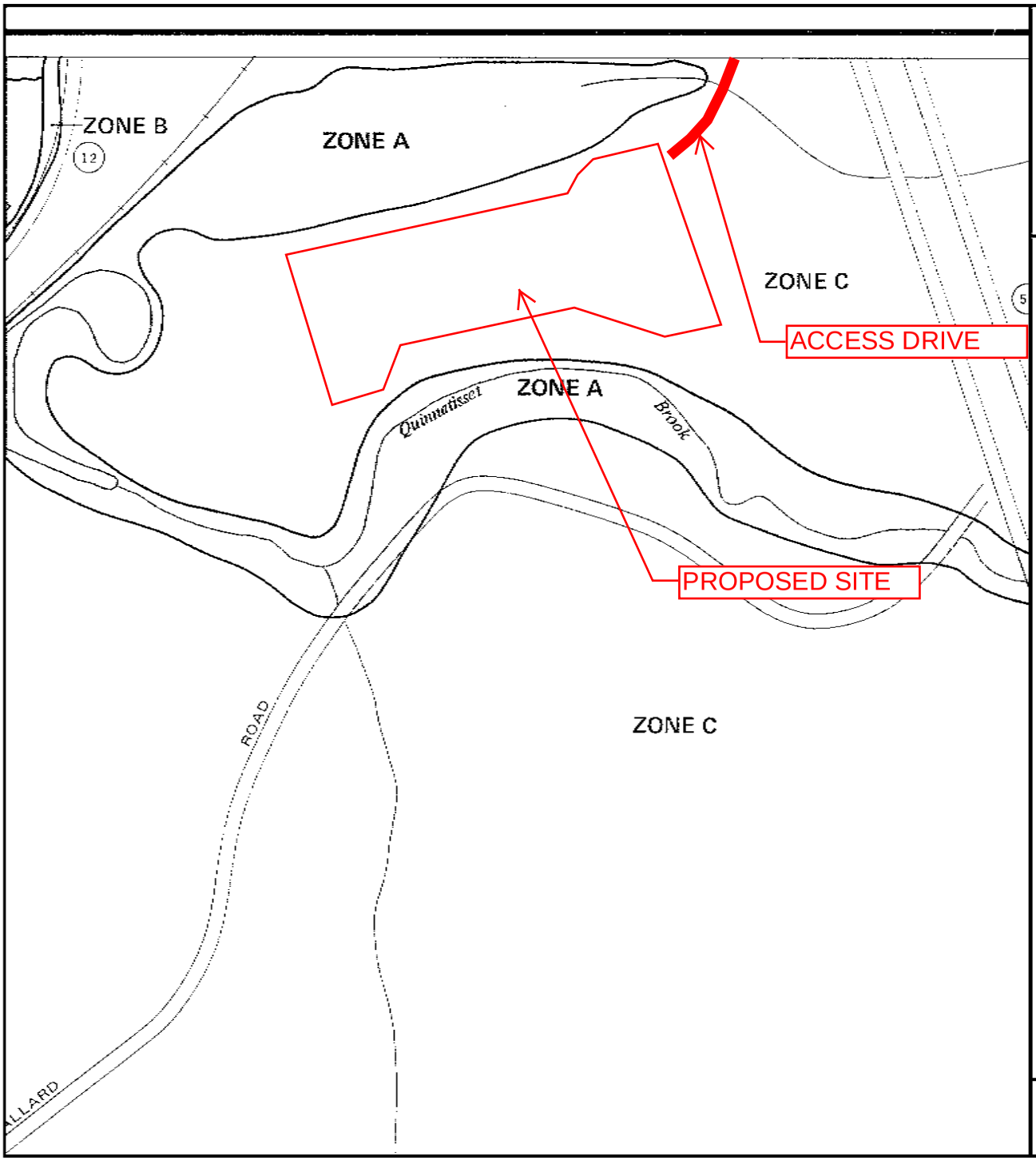
1 BALLARD ROAD
THOMPSON, CT 06277

USGS QUADRANGLE MAP

SCALE : 1" = 2000'-0"

APPENDIX B

FEMA FIRM Map



N

APPROXIMATE SCALE

400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
THOMPSON,
CONNECTICUT
WINDHAM COUNTY

PANEL 14 OF 20

(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
090117 0014 B

EFFECTIVE DATE:
NOVEMBER 1, 1984

Federal Emergency Management Agency

APPENDIX C

NRCS Soil Survey

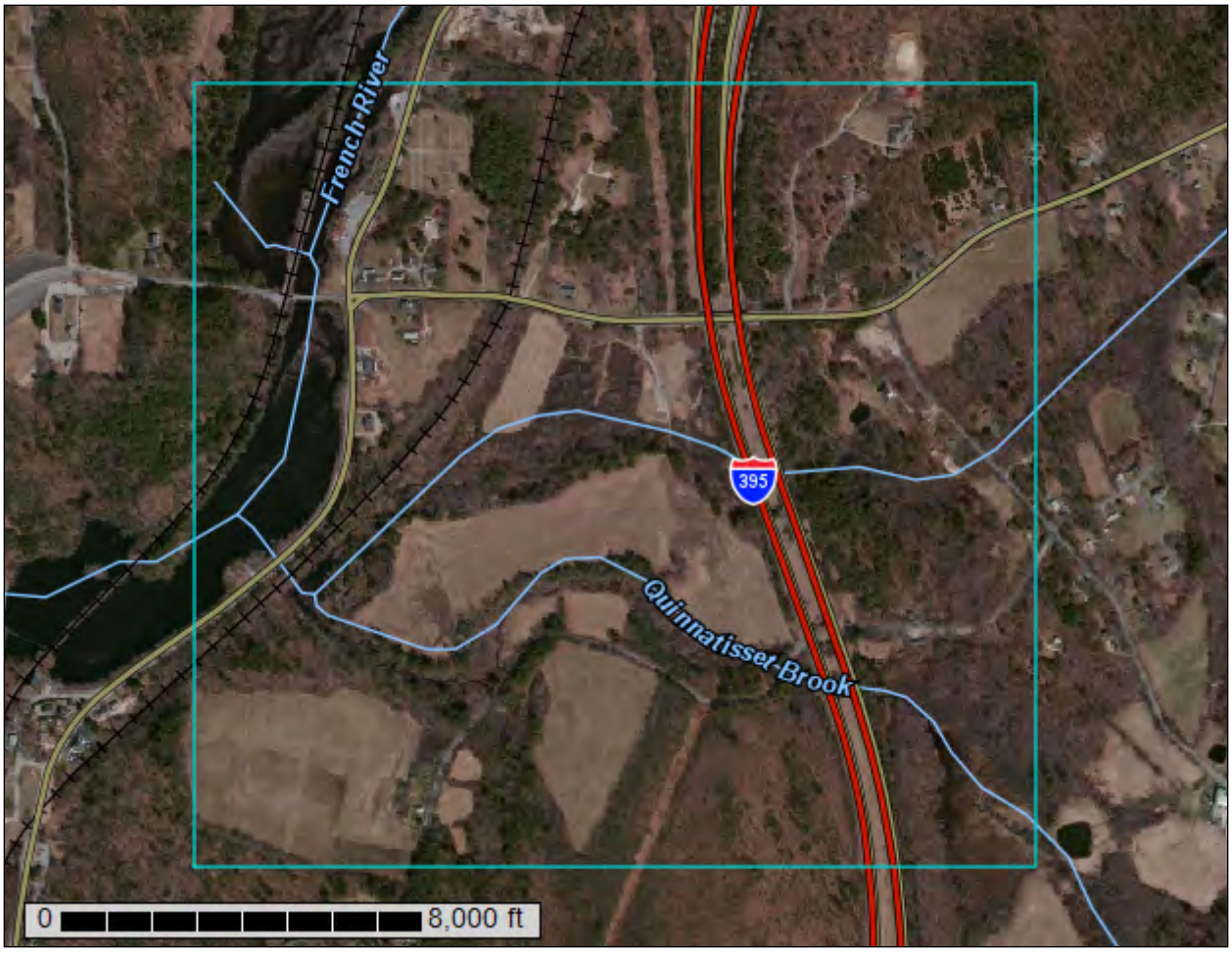
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for State of Connecticut



June 9, 2016

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group (Thompson C-TECSOLAR)

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

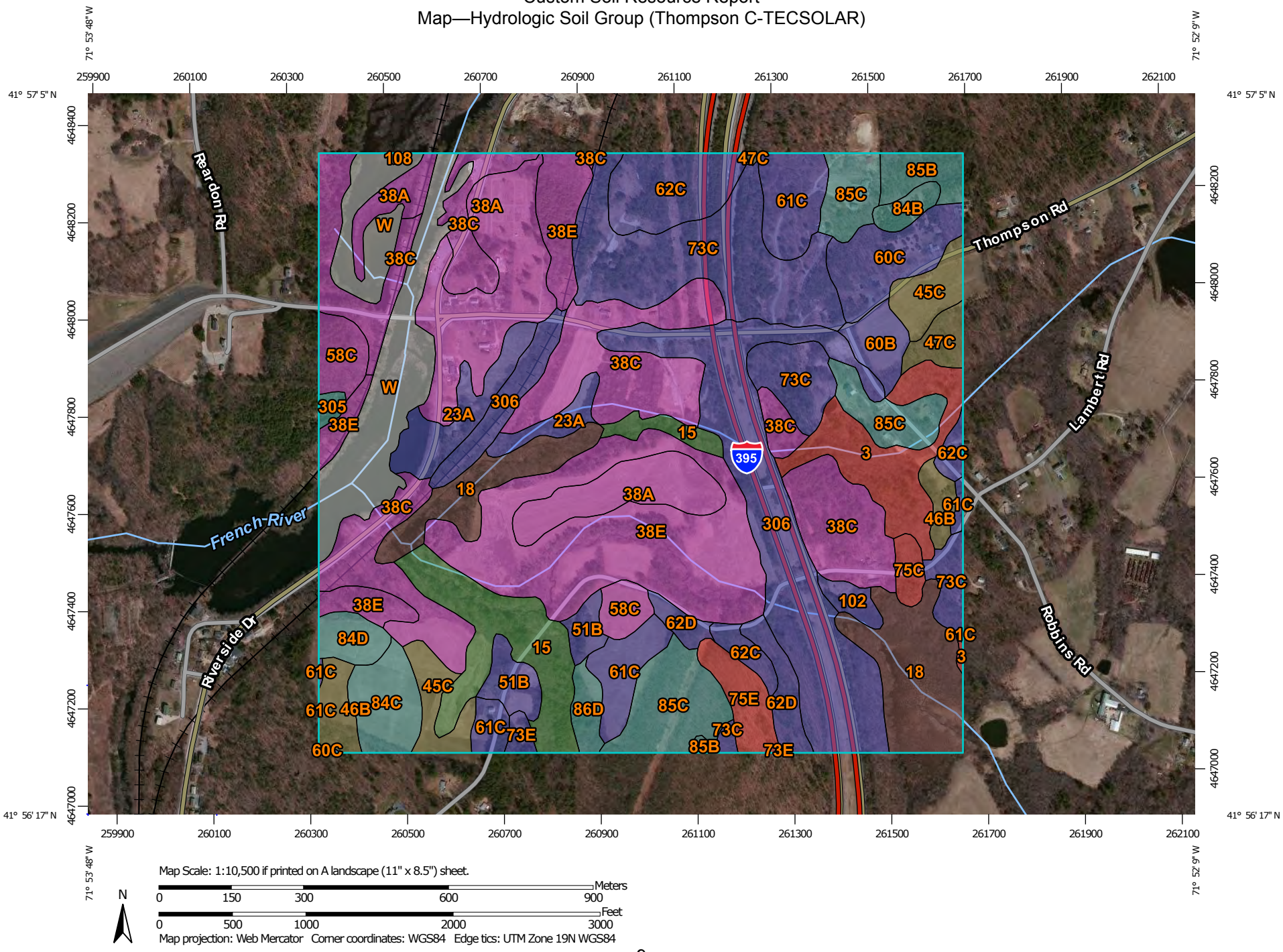
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group (Thompson C-TECSOLAR)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 14, Sep 22, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 8, 2011—Apr 9, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group (Thompson C-TECSOLAR)

Hydrologic Soil Group— Summary by Map Unit — State of Connecticut (CT600)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	12.7	3.1%
15	Scarboro muck, 0 to 3 percent slopes	A/D	16.9	4.2%
18	Catden and Freetown soils, 0 to 2 percent slopes	B/D	22.1	5.4%
23A	Sudbury sandy loam, 0 to 5 percent slopes	B	9.4	2.3%
38A	Hinckley loamy sand, 0 to 3 percent slopes	A	31.5	7.7%
38C	Hinckley loamy sand, 3 to 15 percent slopes	A	52.8	13.0%
38E	Hinckley loamy sand, 15 to 45 percent slopes	A	45.5	11.2%
45C	Woodbridge fine sandy loam, 8 to 15 percent slopes	C/D	8.4	2.1%
46B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	C/D	5.2	1.3%
47C	Woodbridge fine sandy loam, 3 to 15 percent slopes, extremely stony	C/D	2.8	0.7%
51B	Sutton fine sandy loam, 2 to 8 percent slopes, very stony	B	5.1	1.3%
58C	Gloucester gravelly sandy loam, 8 to 15 percent slopes, very stony	A	6.2	1.5%
60B	Canton and Charlton soils, 3 to 8 percent slopes	B	3.7	0.9%
60C	Canton and Charlton soils, 8 to 15 percent slopes	B	8.9	2.2%
61C	Canton and Charlton soils, 8 to 15 percent slopes, very stony	B	14.0	3.4%
62C	Canton and Charlton soils, 3 to 15 percent slopes, extremely stony	B	12.6	3.1%
62D	Canton and Charlton soils, 15 to 35 percent slopes, extremely stony	B	5.3	1.3%

Hydrologic Soil Group— Summary by Map Unit — State of Connecticut (CT600)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
73C	Charlton-Chatfield complex, 3 to 15 percent slopes, very rocky	B	33.7	8.3%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	B	1.0	0.3%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	D	1.9	0.5%
75E	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes	D	4.7	1.2%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	C	1.9	0.5%
84C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes	C	6.5	1.6%
84D	Paxton and Montauk fine sandy loams, 15 to 25 percent slopes	C	3.2	0.8%
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	C	4.1	1.0%
85C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes, very stony	C	19.1	4.7%
86D	Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony	C	2.4	0.6%
102	Pootatuck fine sandy loam	B	1.8	0.5%
108	Saco silt loam	B/D	0.1	0.0%
305	Udorthents-Pits complex, gravelly	C	0.8	0.2%
306	Udorthents-Urban land complex	B	38.5	9.5%
W	Water		24.1	5.9%
Totals for Area of Interest			**407.1**	**100.0%**

Rating Options—Hydrologic Soil Group (Thompson C-TECSOLAR)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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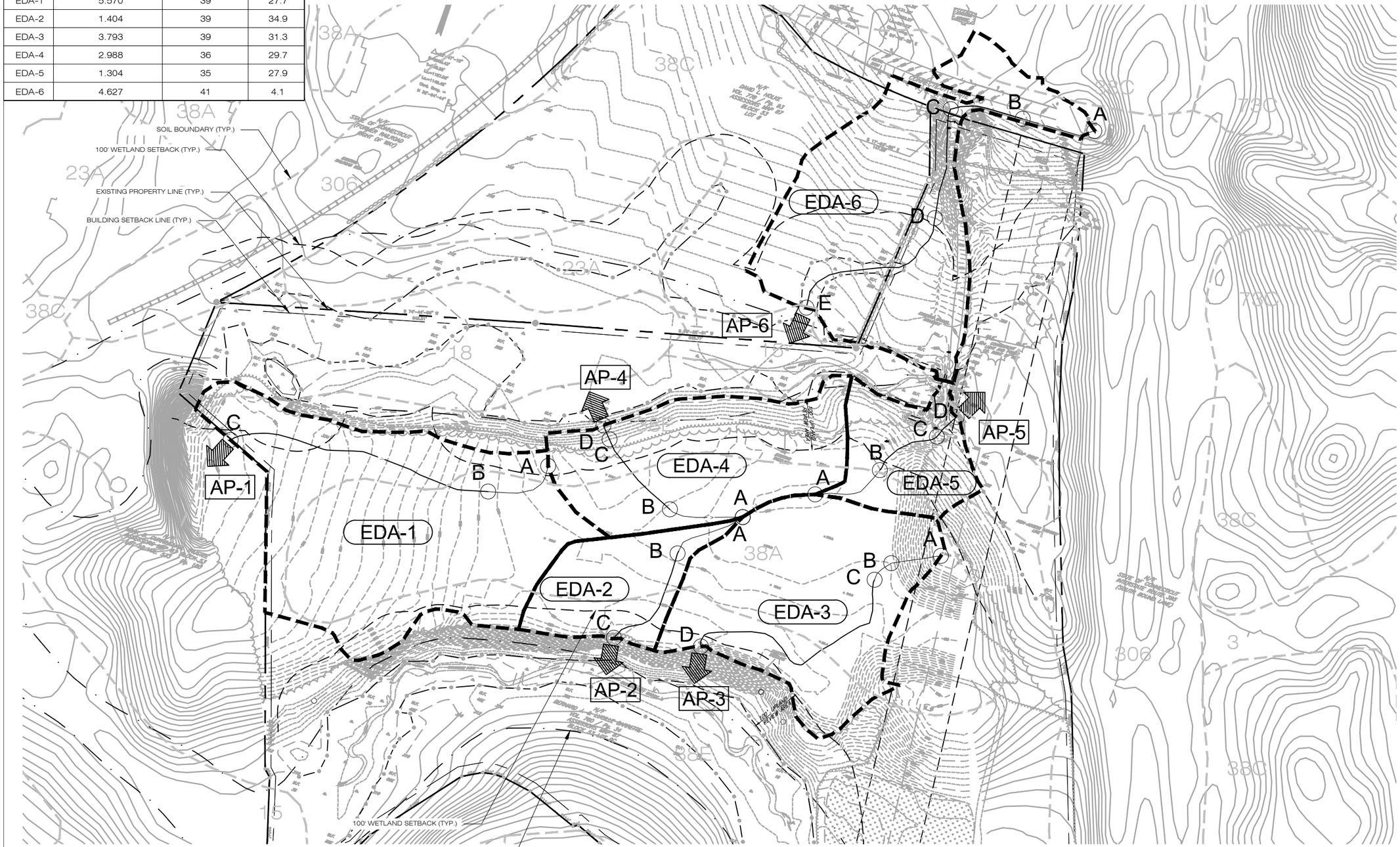
APPENDIX D

Existing Drainage Area Map (EDA-1) &
Hydrologic Computations (HydroCAD)

EXISTING DRAINAGE AREAS

	TOTAL AREA (ACRES)	COMPOSITE CN	TC (MINS.)
EDA-1	5.570	39	27.7
EDA-2	1.404	39	34.9
EDA-3	3.793	39	31.3
EDA-4	2.988	36	29.7
EDA-5	1.304	35	27.9
EDA-6	4.627	41	4.1



FOR PERMITTING ONLY

100 0 50 100 200
(IN FEET) 1 inch = 100 ft.

C-TECSOLAR
1 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860)-580-7174

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

APPROVALS

LANDLORD: _____ DATE: _____

CLIENT: _____ DATE: _____

NO	DATE	REVISION
0	07/01/16	FOR REVIEW: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONALS OF RECORD

PROF: SCOTT M. CHASSE P.E.
COMP: ALL POINTS TECHNOLGY CORPORATION, P.C.
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

NOTE:

C-TECSOLAR
"BARRETTE FARMS"

SITE ADDRESS: 1 BALLARD ROAD THOMPSON, CT

APT FILING NUMBER: CT481111

DRAWN BY: BJP

CHECKED BY: SMC

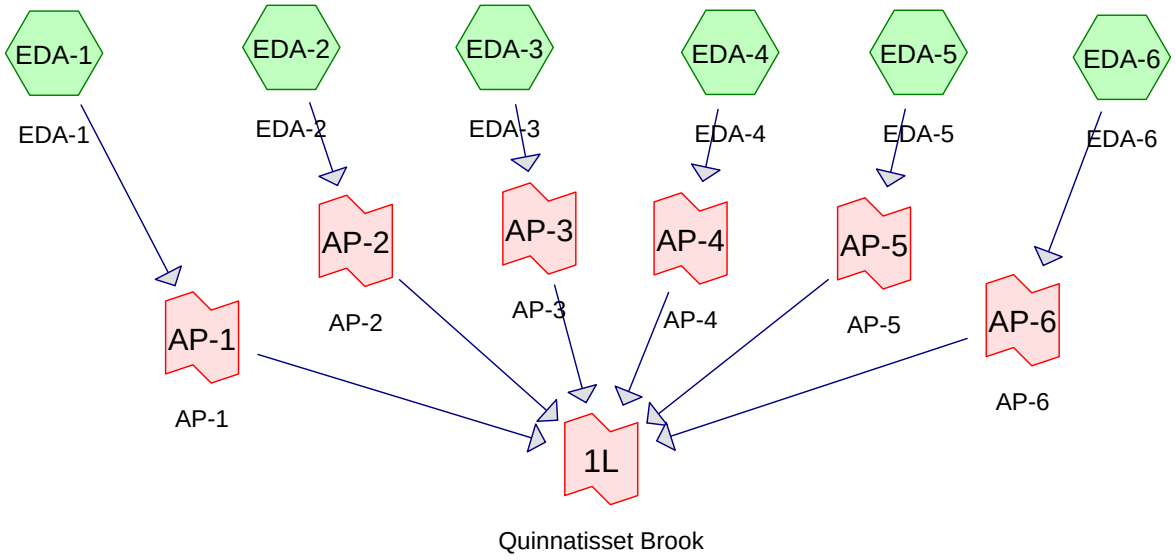
DATE: 07/01/16

SHEET TITLE:

EXISTING DRAINAGE AREA MAP

SHEET NUMBER:

EDA-1



Subcat Reach Pond Link

Routing Diagram for Thompson C-Tec Solar - Existing Rev0 06-xx-16
Prepared by Microsoft, Printed 6/23/2016

Summary for Subcatchment EDA-1: EDA-1

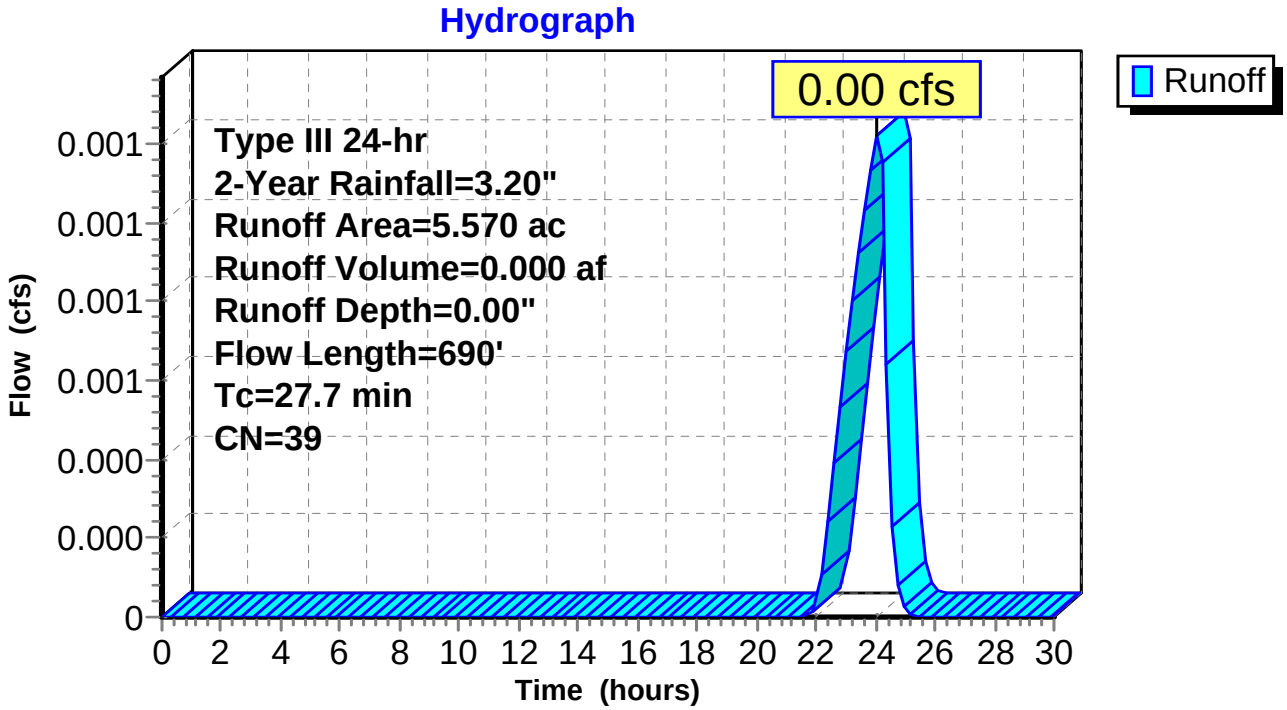
Runoff = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
5.570	39	Pasture/grassland/range, Good, HSG A
5.570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	150	0.0200	0.13		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
8.0	540	0.0260	1.13		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
27.7	690	Total			

Subcatchment EDA-1: EDA-1



Summary for Subcatchment EDA-2: EDA-2

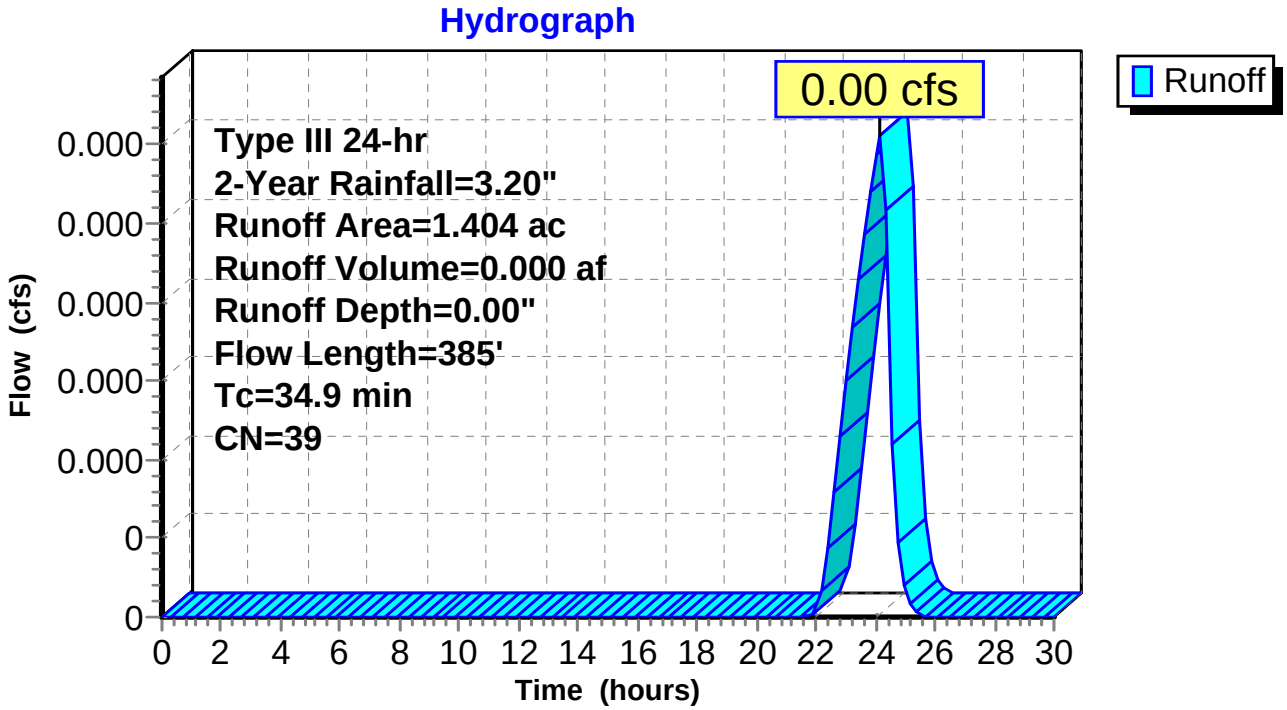
Runoff = 0.00 cfs @ 24.11 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
1.404	39	Pasture/grassland/range, Good, HSG A
1.404		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.8	150	0.0066	0.08		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
4.1	235	0.0190	0.96		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
34.9	385	Total			

Subcatchment EDA-2: EDA-2



Summary for Subcatchment EDA-3: EDA-3

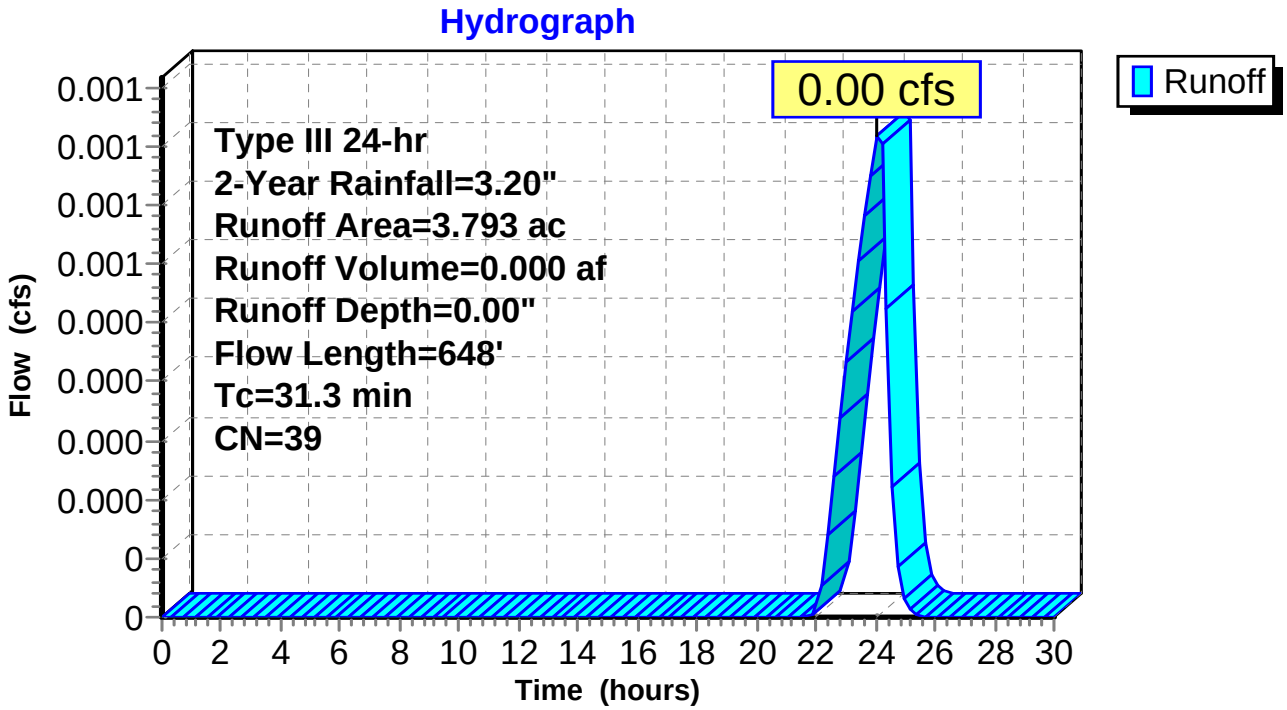
Runoff = 0.00 cfs @ 24.07 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
3.793	39	Pasture/grassland/range, Good, HSG A
3.793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	100	0.1550	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
10.8	50	0.0100	0.08		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.20"
14.2	498	0.0070	0.59		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
31.3	648	Total			

Subcatchment EDA-3: EDA-3



Summary for Subcatchment EDA-4: EDA-4

[45] Hint: Runoff=Zero

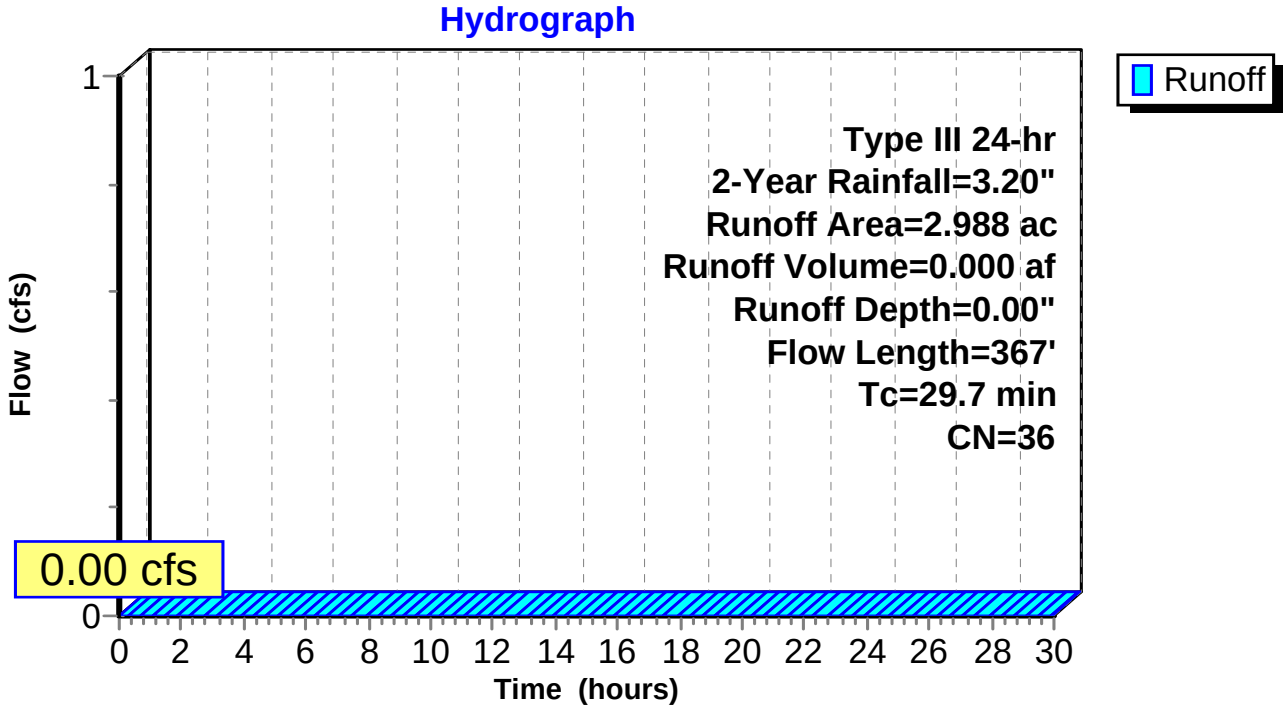
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
2.080	39	Pasture/grassland/range, Good, HSG A
0.908	30	Woods, Good, HSG A
2.988	36	Weighted Average
2.988		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0100	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
3.5	187	0.0160	0.89		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.2	30	0.1660	2.04		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
29.7	367	Total			

Subcatchment EDA-4: EDA-4



Summary for Subcatchment EDA-5: EDA-5

[45] Hint: Runoff=Zero

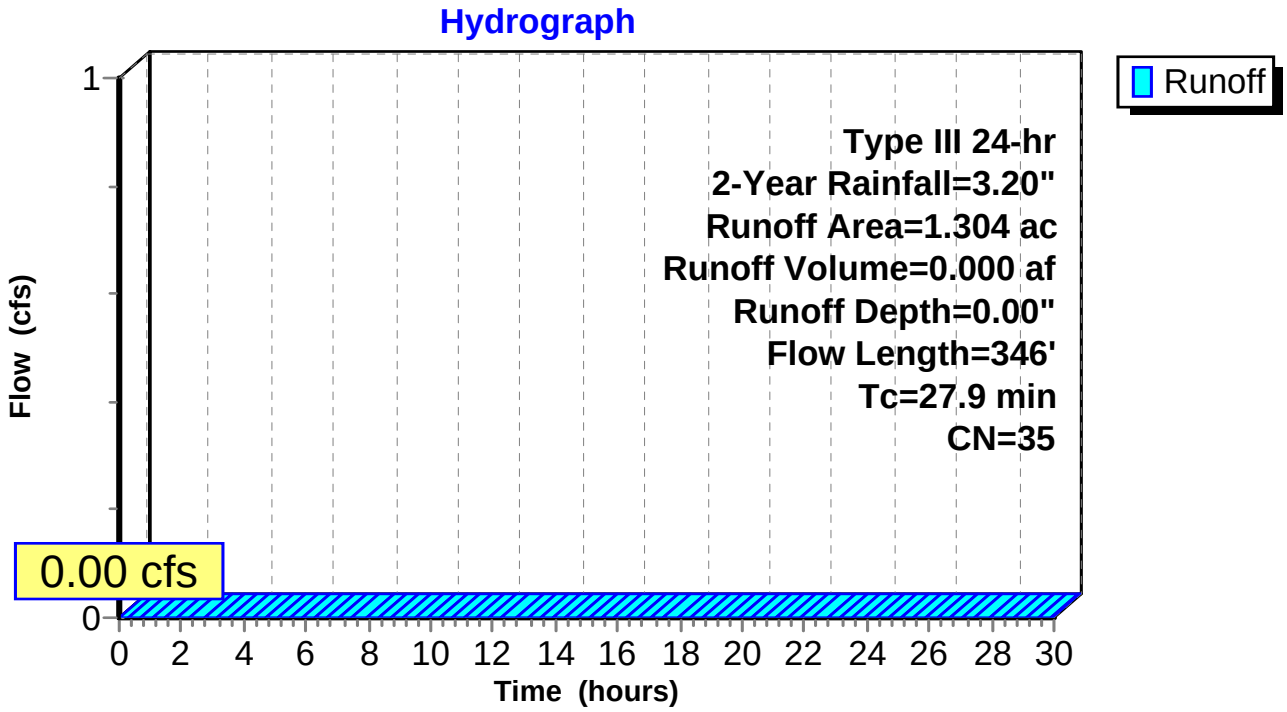
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 2-Year Rainfall=3.20"

	Area (ac)	CN	Description
	0.749	39	Pasture/grassland/range, Good, HSG A
*	0.340	30	Woods, Good, HSG A
	0.215	30	Woods, Good, HSG A
	1.304	35	Weighted Average
	1.304		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0100	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
1.3	140	0.0640	1.77		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.6	56	0.0890	1.49		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
27.9	346	Total			

Subcatchment EDA-5: EDA-5



Summary for Subcatchment EDA-6: EDA-6

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.01 cfs @ 22.67 hrs, Volume= 0.003 af, Depth= 0.01"

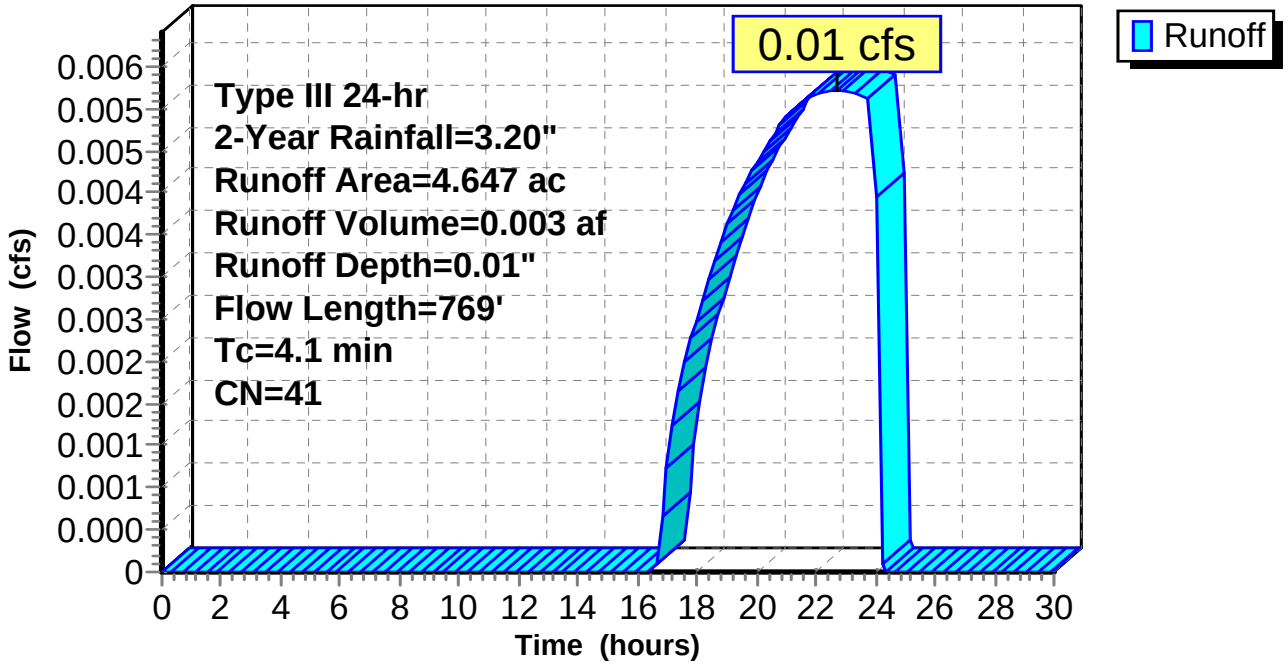
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
0.292	98	Paved parking, HSG B
0.189	96	Gravel surface, HSG A
1.887	30	Woods, Good, HSG A
2.279	39	Pasture/grassland/range, Good, HSG A
4.647	41	Weighted Average
4.355		93.72% Pervious Area
0.292		6.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	150	0.0200	1.49		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.20"
0.7	149	0.0333	3.70		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.7	223	0.1430	5.67		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
1.0	247	0.0800	4.24		**Shallow Concentrated Flow, D-E** Grassed Waterway Kv= 15.0 fps
4.1	769	Total			

Subcatchment EDA-6: EDA-6

Hydrograph

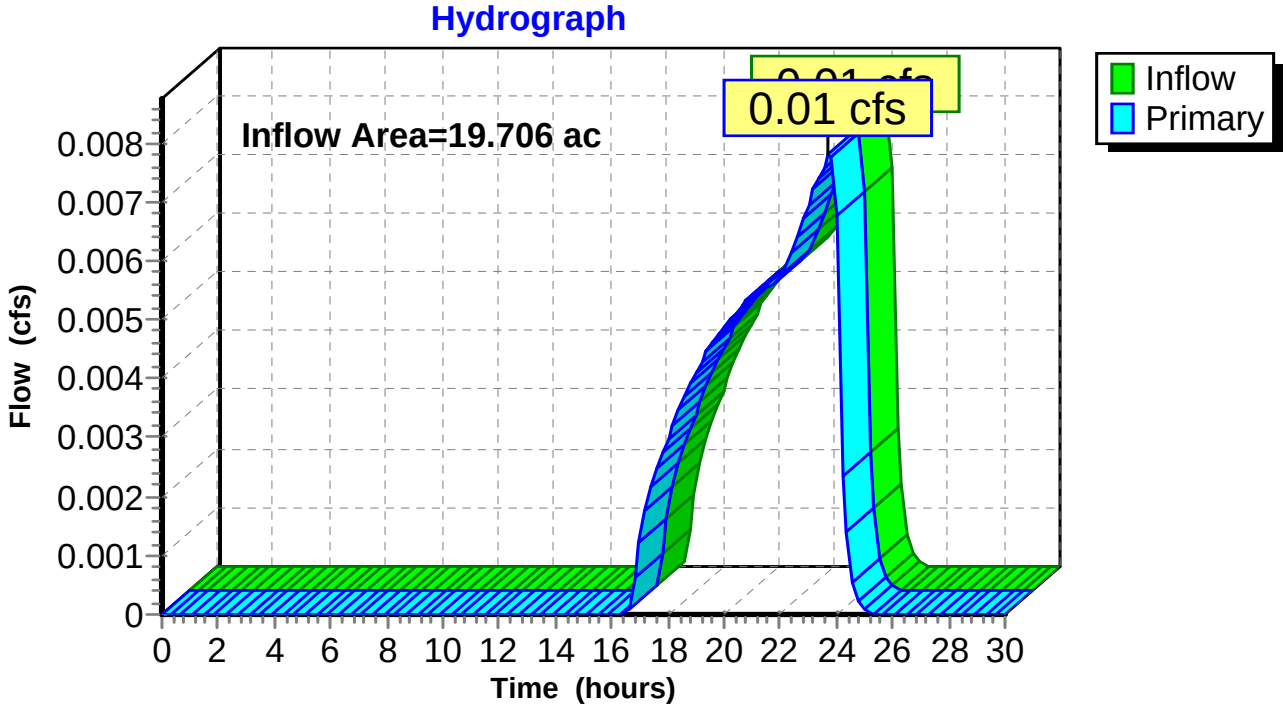


Summary for Link 1L: Quinnatisset Brook

Inflow Area = 19.706 ac, 1.48% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.01 cfs @ 23.73 hrs, Volume= 0.003 af
Primary = 0.01 cfs @ 23.73 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link 1L: Quinnatisset Brook

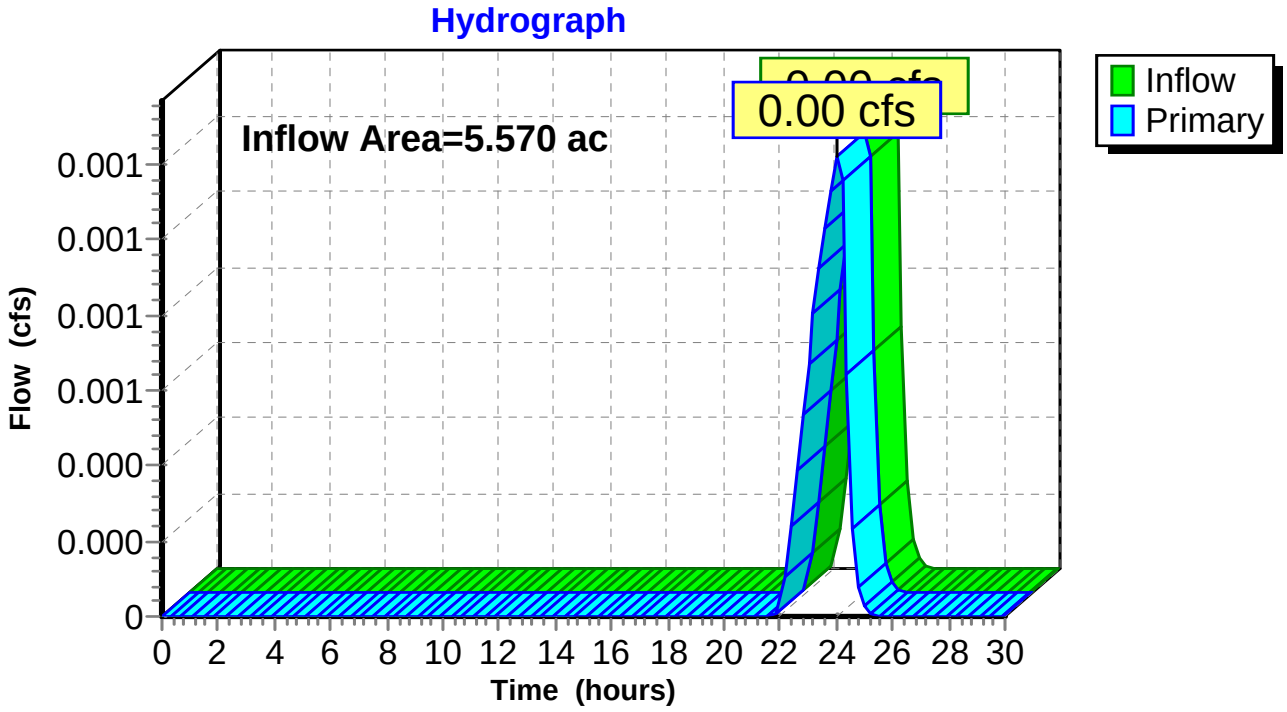


Summary for Link AP-1: AP-1

Inflow Area = 5.570 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-1: AP-1

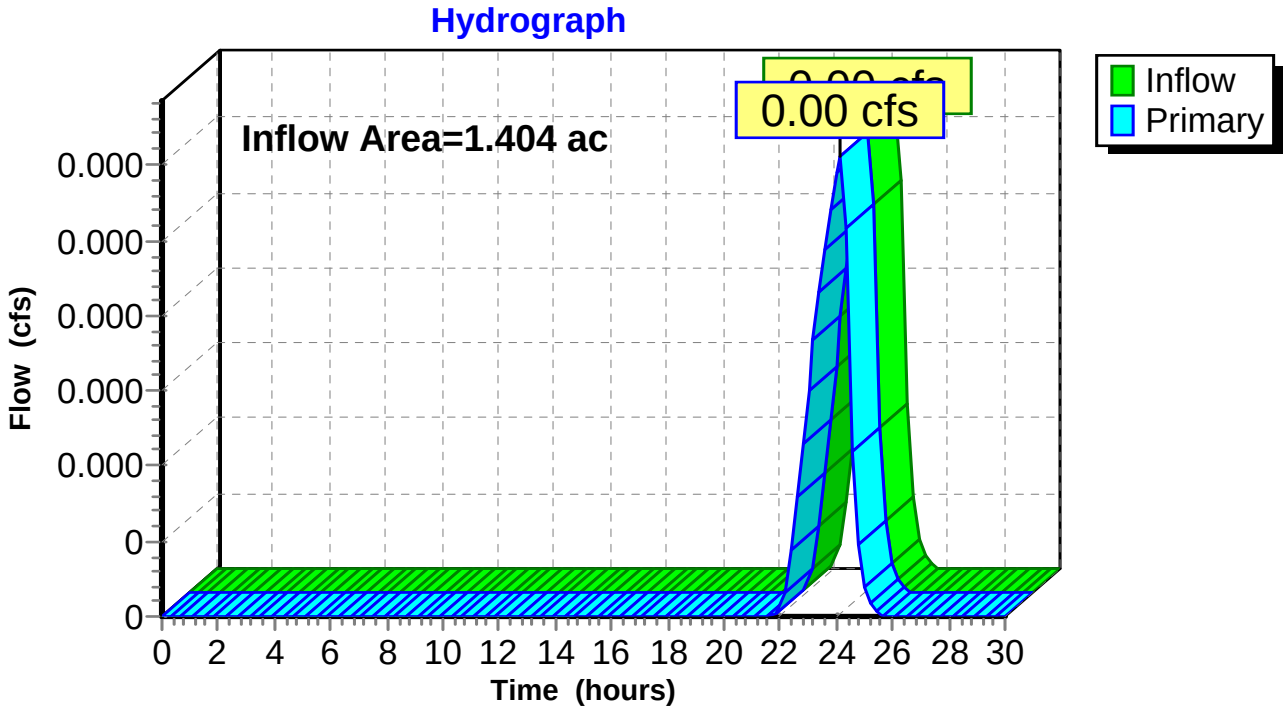


Summary for Link AP-2: AP-2

Inflow Area = 1.404 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 24.11 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 24.11 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-2: AP-2

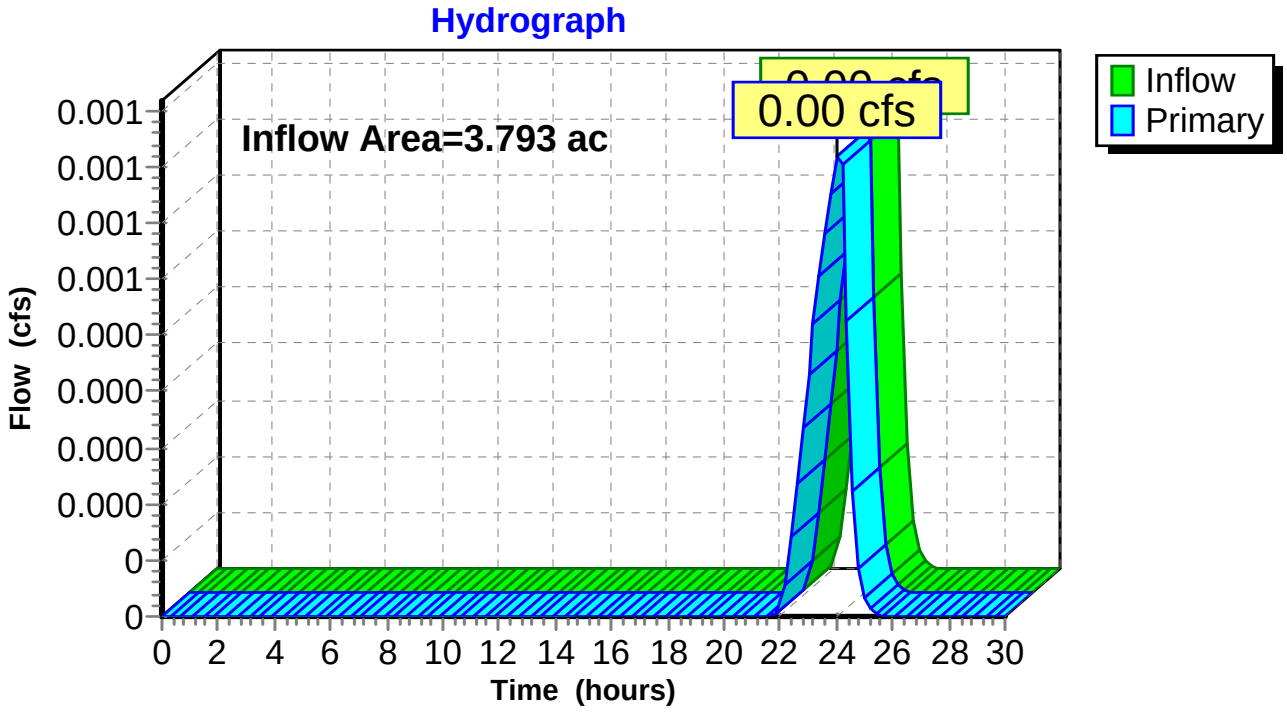


Summary for Link AP-3: AP-3

Inflow Area = 3.793 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 24.07 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 24.07 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-3: AP-3

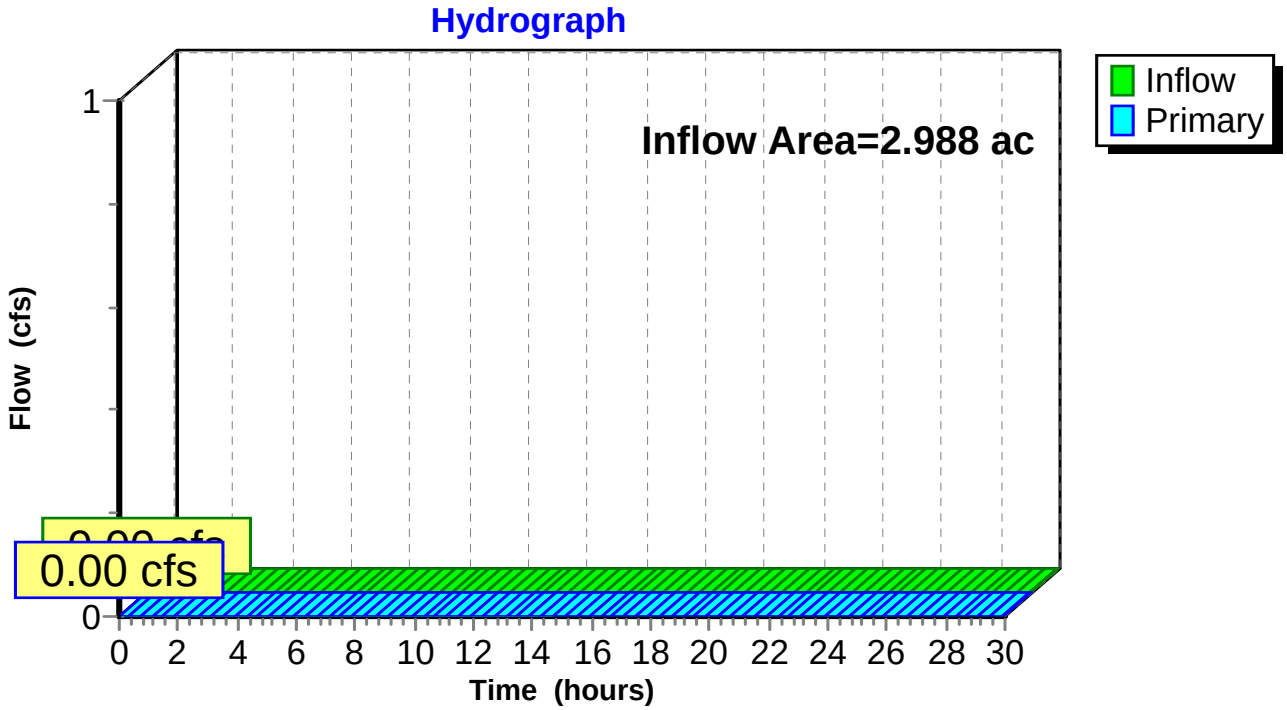


Summary for Link AP-4: AP-4

Inflow Area = 2.988 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-4: AP-4

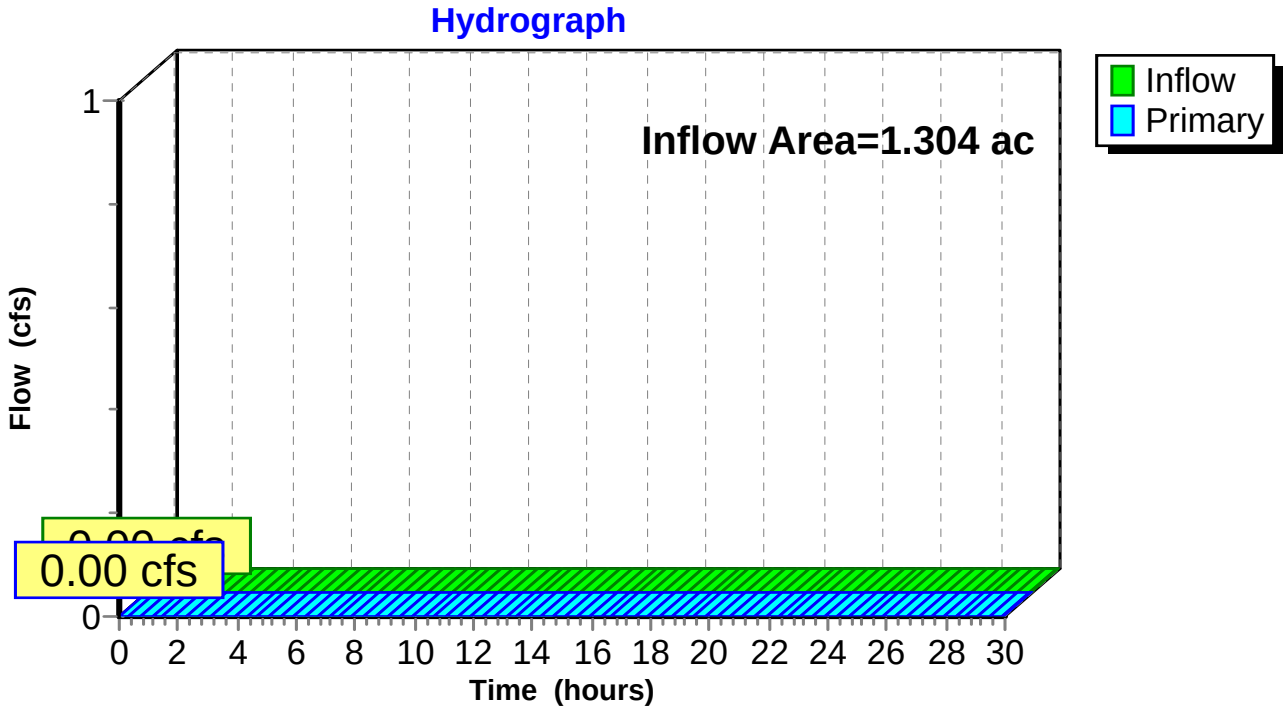


Summary for Link AP-5: AP-5

Inflow Area = 1.304 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-5: AP-5

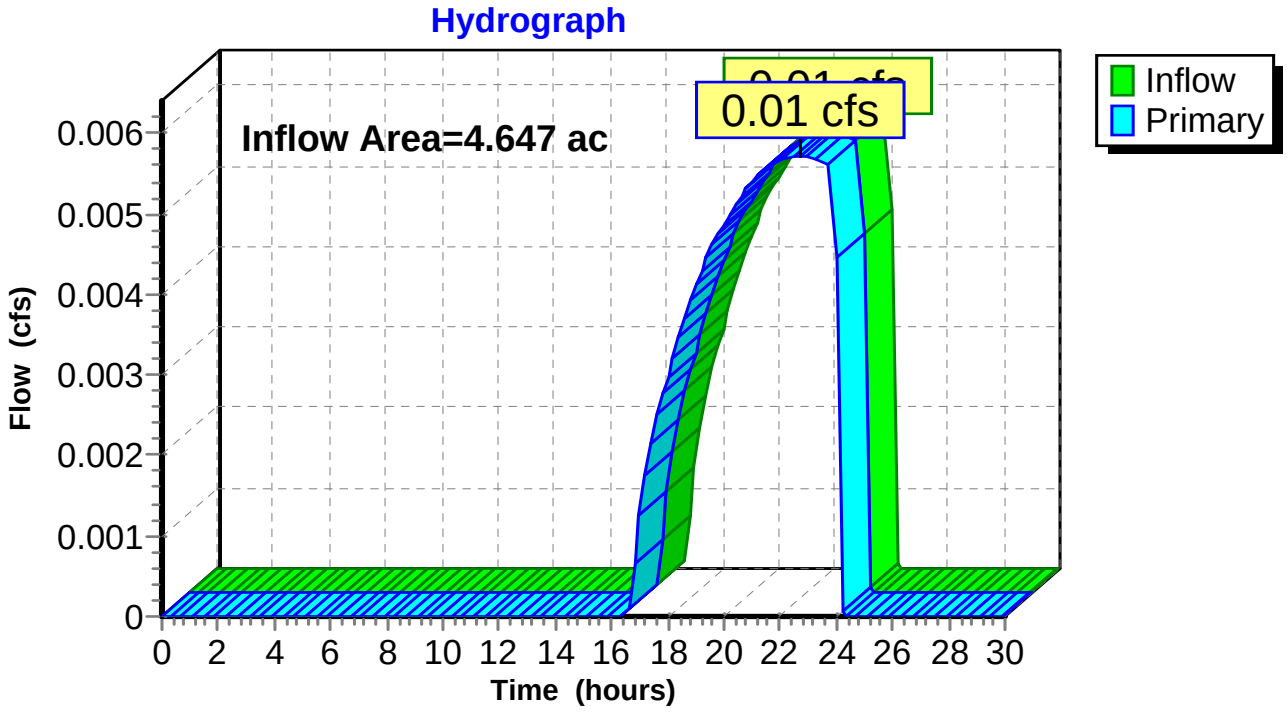


Summary for Link AP-6: AP-6

Inflow Area = 4.647 ac, 6.28% Impervious, Inflow Depth = 0.01" for 2-Year event
Inflow = 0.01 cfs @ 22.67 hrs, Volume= 0.003 af
Primary = 0.01 cfs @ 22.67 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-6: AP-6



Summary for Subcatchment EDA-1: EDA-1

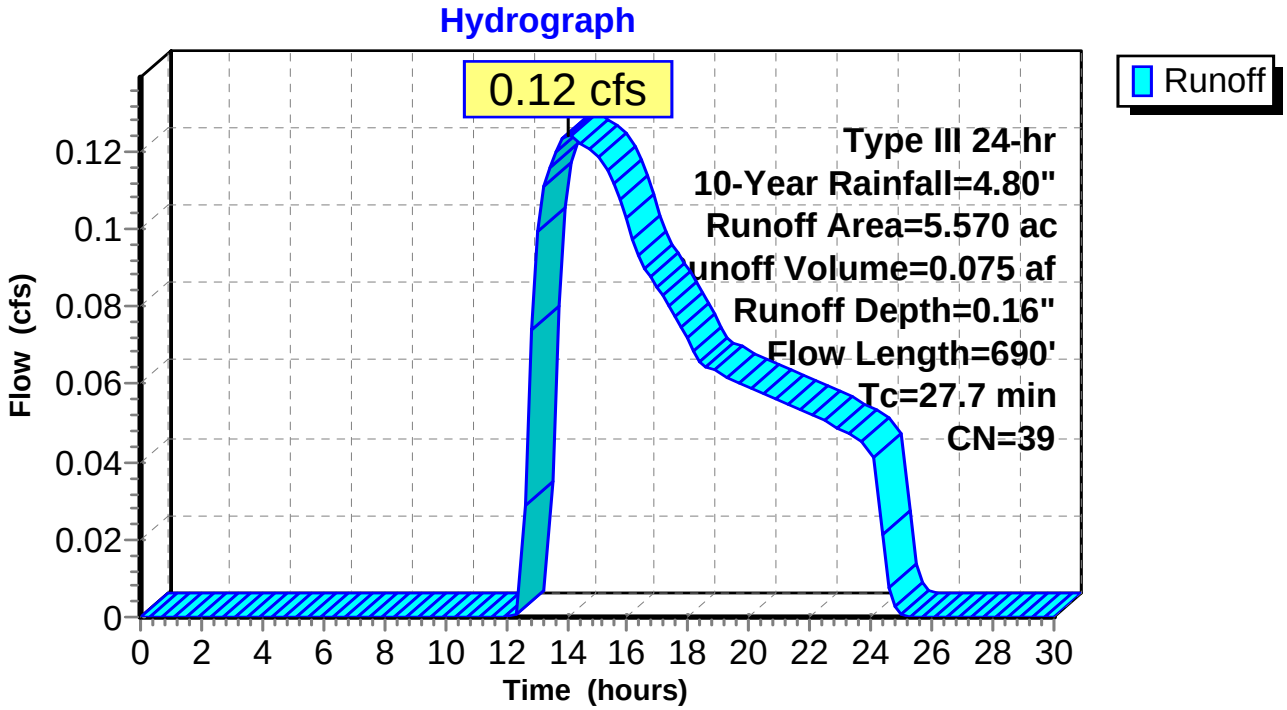
Runoff = 0.12 cfs @ 14.01 hrs, Volume= 0.075 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (ac)	CN	Description
5.570	39	Pasture/grassland/range, Good, HSG A
5.570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	150	0.0200	0.13		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
8.0	540	0.0260	1.13		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
27.7	690	Total			

Subcatchment EDA-1: EDA-1



Summary for Subcatchment EDA-2: EDA-2

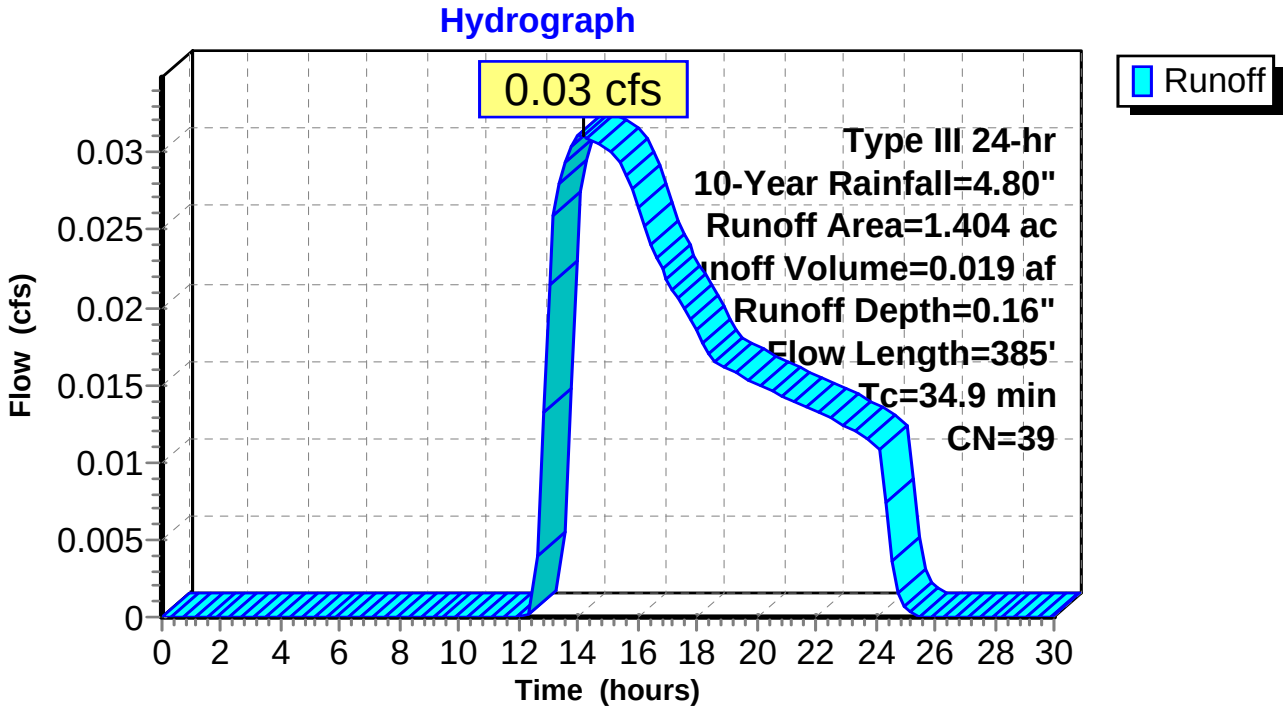
Runoff = 0.03 cfs @ 14.13 hrs, Volume= 0.019 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (ac)	CN	Description
1.404	39	Pasture/grassland/range, Good, HSG A
1.404		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.8	150	0.0066	0.08		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
4.1	235	0.0190	0.96		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
34.9	385	Total			

Subcatchment EDA-2: EDA-2



Summary for Subcatchment EDA-3: EDA-3

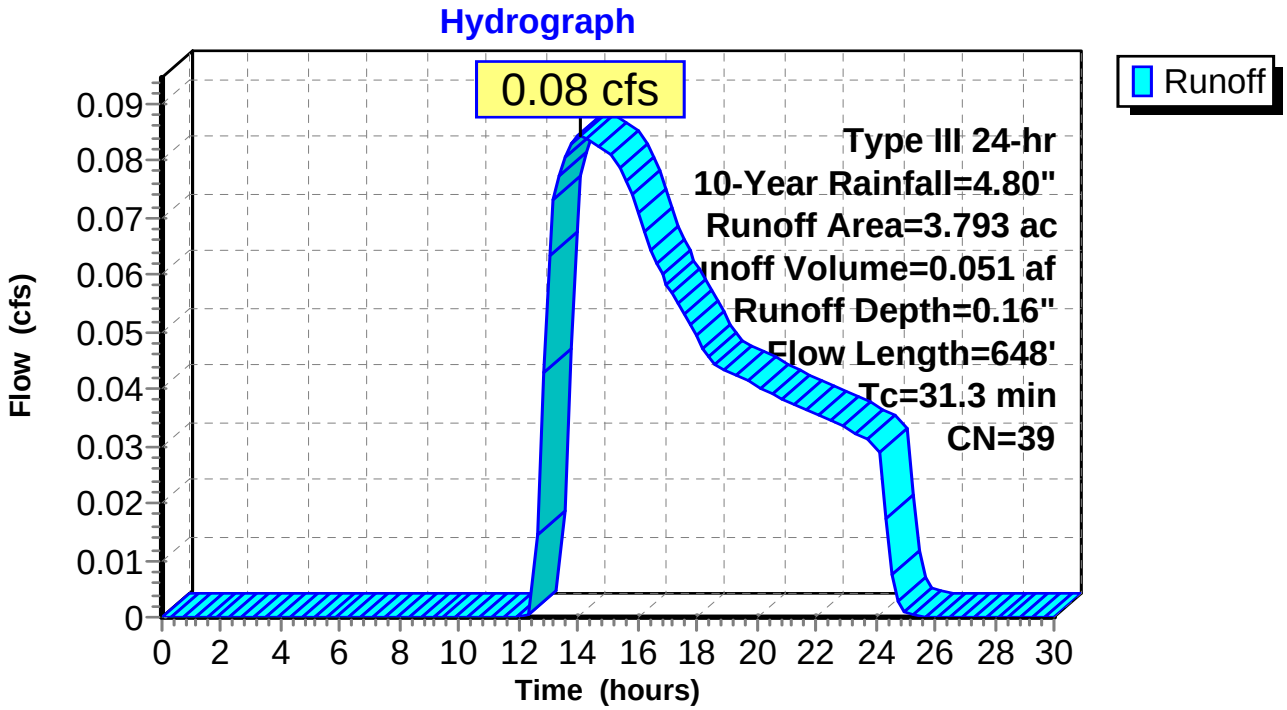
Runoff = 0.08 cfs @ 14.06 hrs, Volume= 0.051 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (ac)	CN	Description
3.793	39	Pasture/grassland/range, Good, HSG A
3.793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	100	0.1550	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
10.8	50	0.0100	0.08		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.20"
14.2	498	0.0070	0.59		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
31.3	648	Total			

Subcatchment EDA-3: EDA-3



Summary for Subcatchment EDA-4: EDA-4

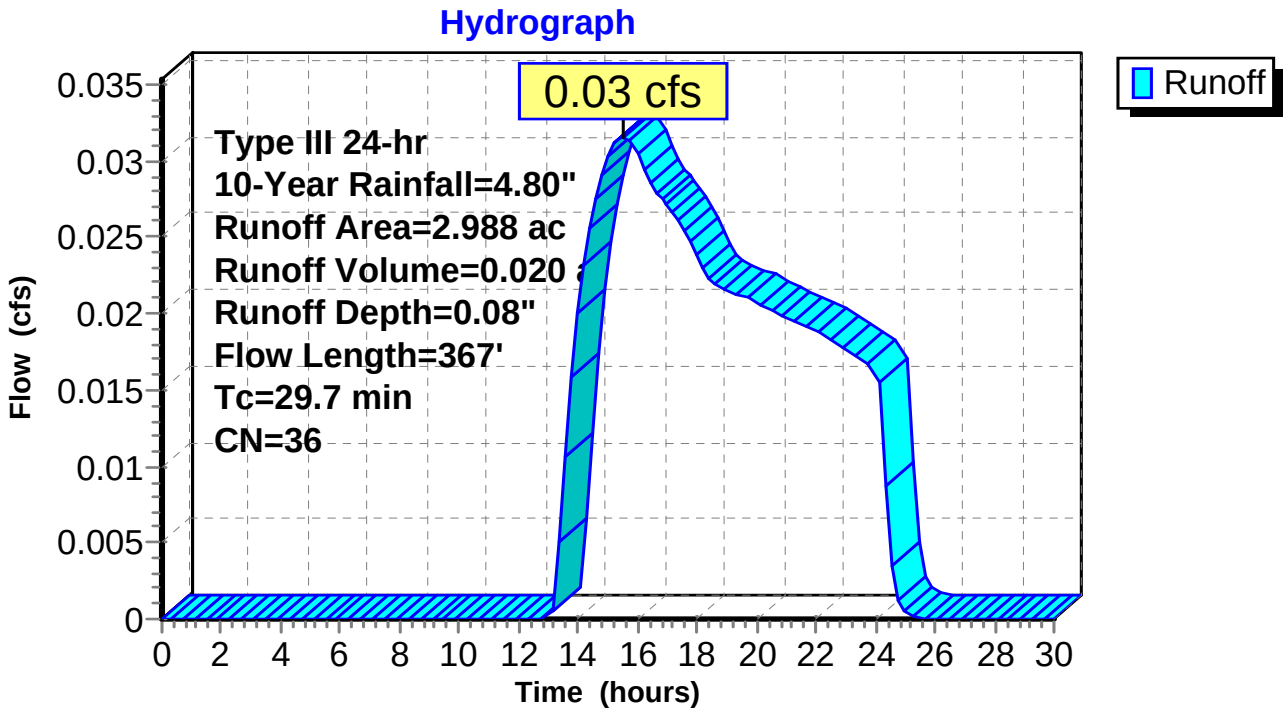
Runoff = 0.03 cfs @ 15.50 hrs, Volume= 0.020 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (ac)	CN	Description
2.080	39	Pasture/grassland/range, Good, HSG A
0.908	30	Woods, Good, HSG A
2.988	36	Weighted Average
2.988		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0100	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
3.5	187	0.0160	0.89		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.2	30	0.1660	2.04		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
29.7	367	Total			

Subcatchment EDA-4: EDA-4



Summary for Subcatchment EDA-5: EDA-5

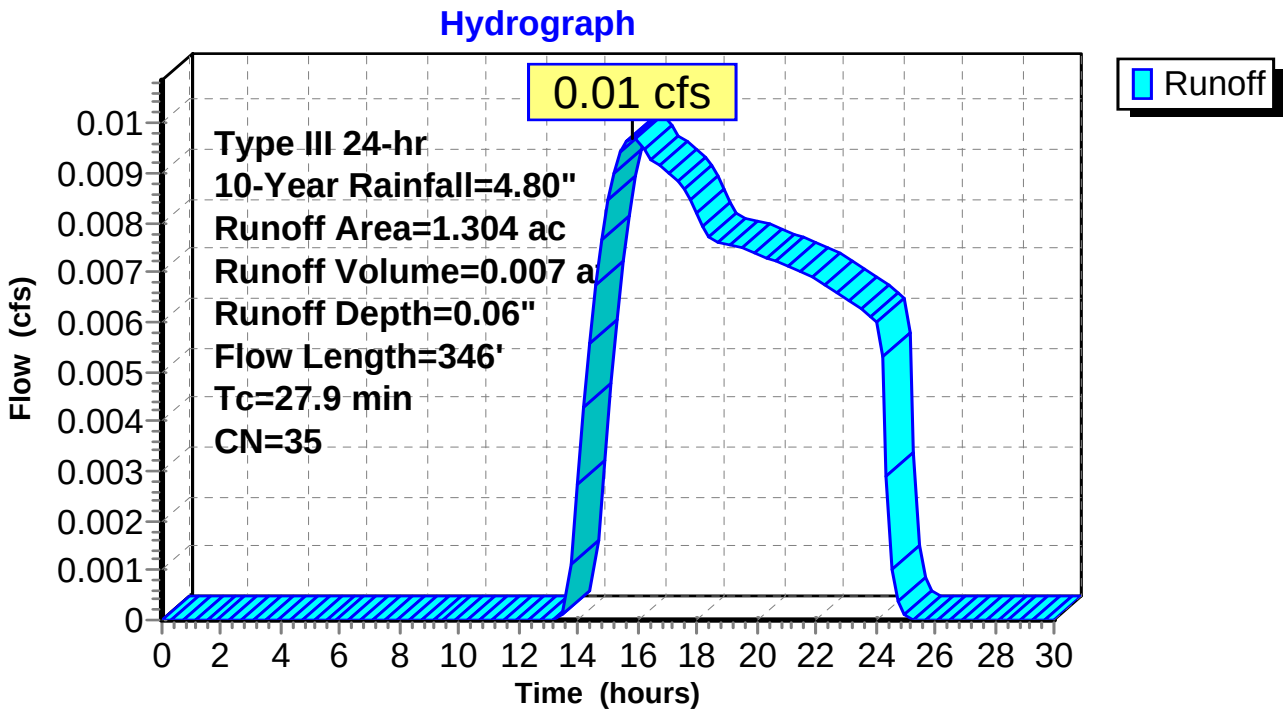
Runoff = 0.01 cfs @ 15.81 hrs, Volume= 0.007 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (ac)	CN	Description
	0.749	39	Pasture/grassland/range, Good, HSG A
*	0.340	30	Woods, Good, HSG A
	0.215	30	Woods, Good, HSG A
	1.304	35	Weighted Average
	1.304		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0100	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
1.3	140	0.0640	1.77		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.6	56	0.0890	1.49		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
27.9	346	Total			

Subcatchment EDA-5: EDA-5



Summary for Subcatchment EDA-6: EDA-6

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.26 cfs @ 12.45 hrs, Volume= 0.088 af, Depth= 0.23"

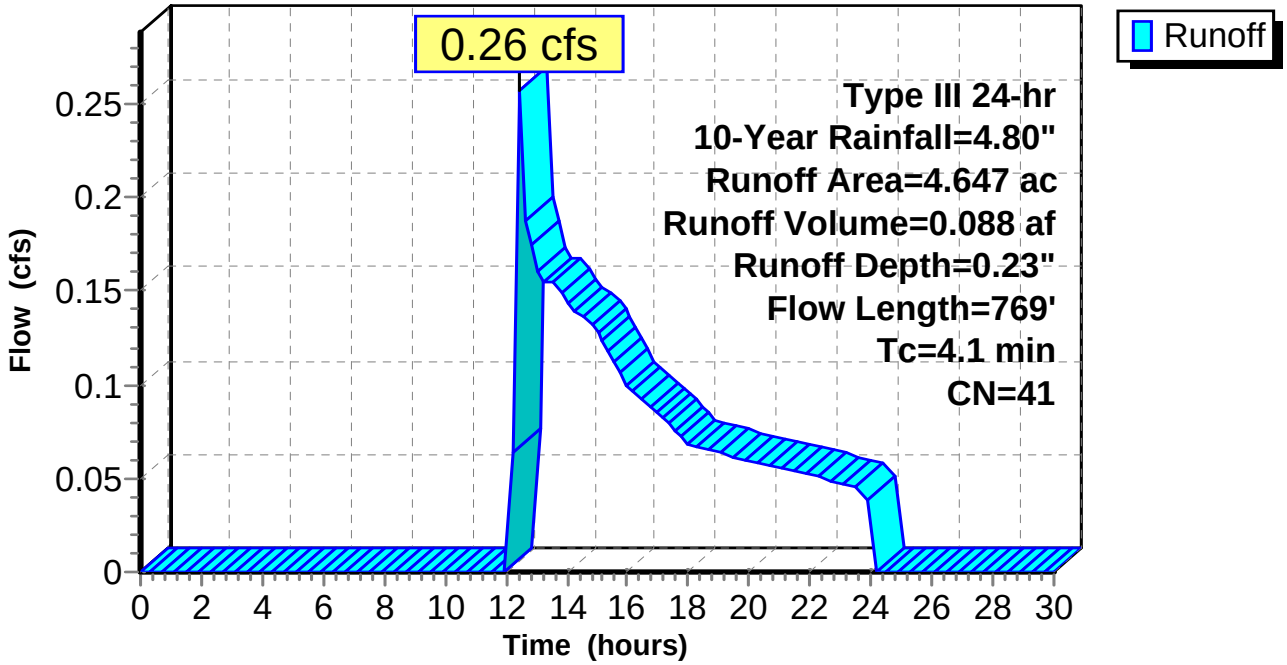
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (ac)	CN	Description
0.292	98	Paved parking, HSG B
0.189	96	Gravel surface, HSG A
1.887	30	Woods, Good, HSG A
2.279	39	Pasture/grassland/range, Good, HSG A
4.647	41	Weighted Average
4.355		93.72% Pervious Area
0.292		6.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	150	0.0200	1.49		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.20"
0.7	149	0.0333	3.70		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.7	223	0.1430	5.67		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
1.0	247	0.0800	4.24		**Shallow Concentrated Flow, D-E** Grassed Waterway Kv= 15.0 fps
4.1	769	Total			

Subcatchment EDA-6: EDA-6

Hydrograph

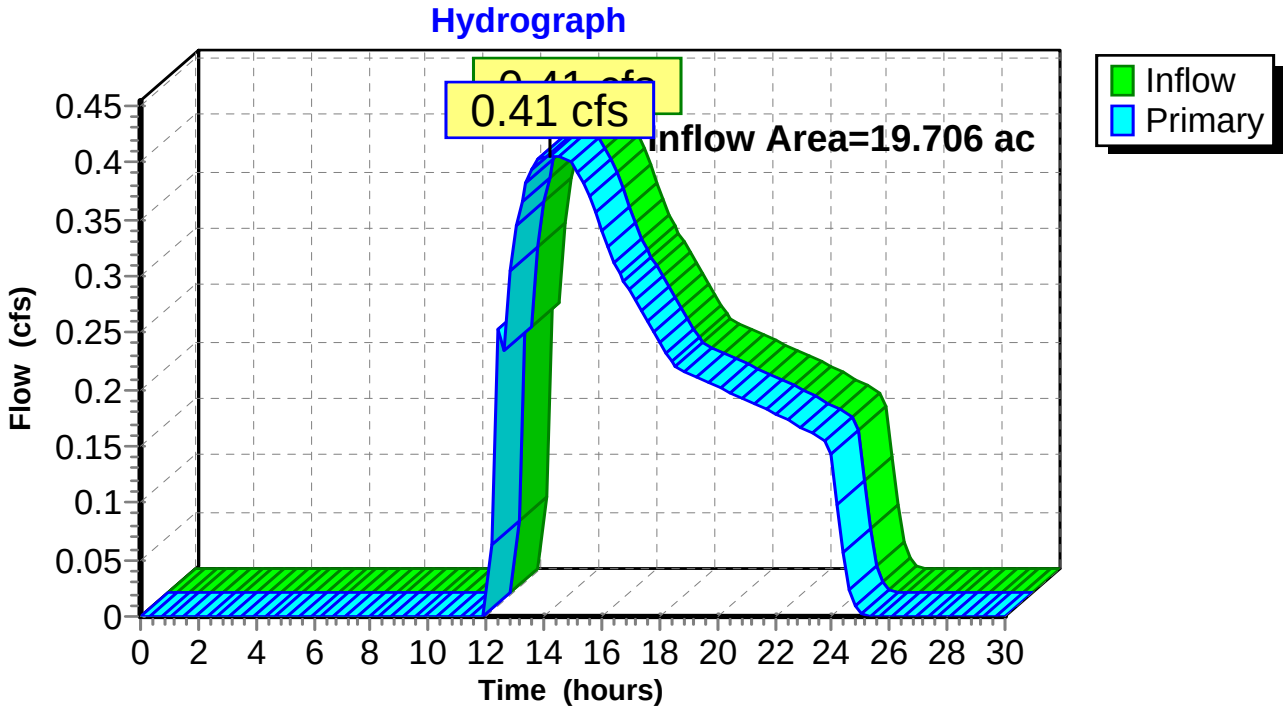


Summary for Link 1L: Quinnatisset Brook

Inflow Area = 19.706 ac, 1.48% Impervious, Inflow Depth = 0.16" for 10-Year event
Inflow = 0.41 cfs @ 14.16 hrs, Volume= 0.259 af
Primary = 0.41 cfs @ 14.16 hrs, Volume= 0.259 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link 1L: Quinnatisset Brook

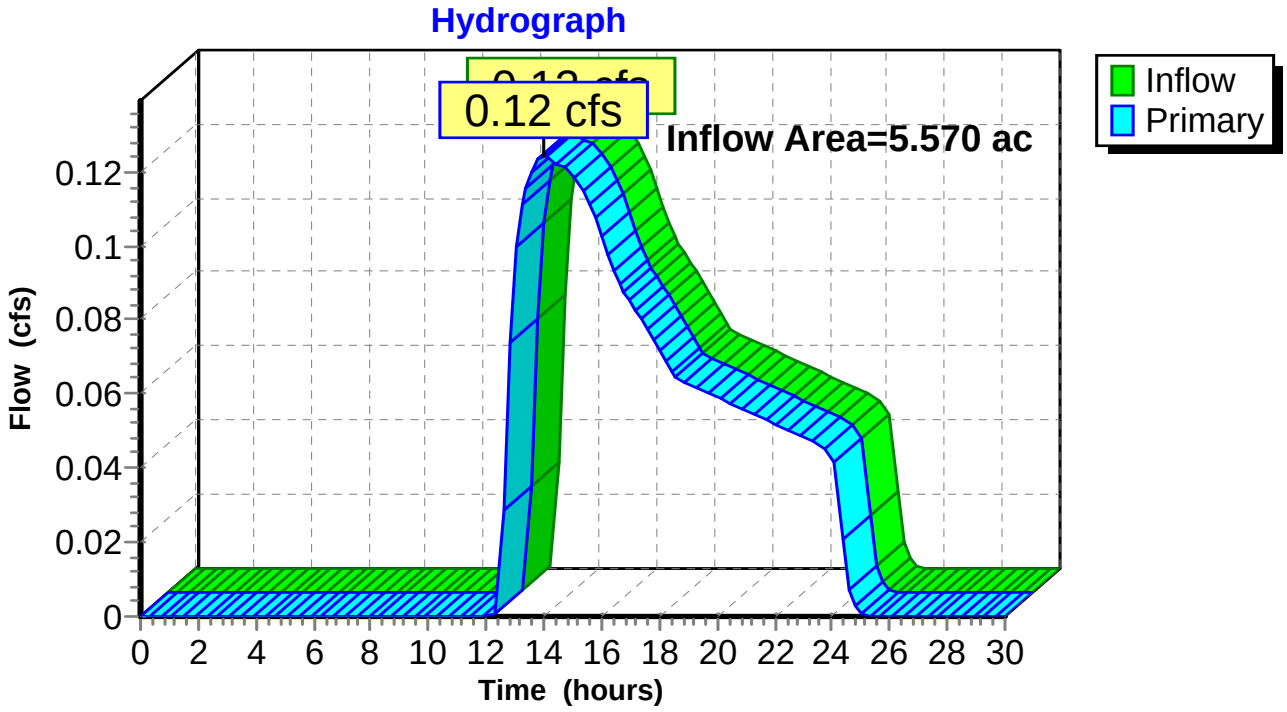


Summary for Link AP-1: AP-1

Inflow Area = 5.570 ac, 0.00% Impervious, Inflow Depth = 0.16" for 10-Year event
Inflow = 0.12 cfs @ 14.01 hrs, Volume= 0.075 af
Primary = 0.12 cfs @ 14.01 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-1: AP-1

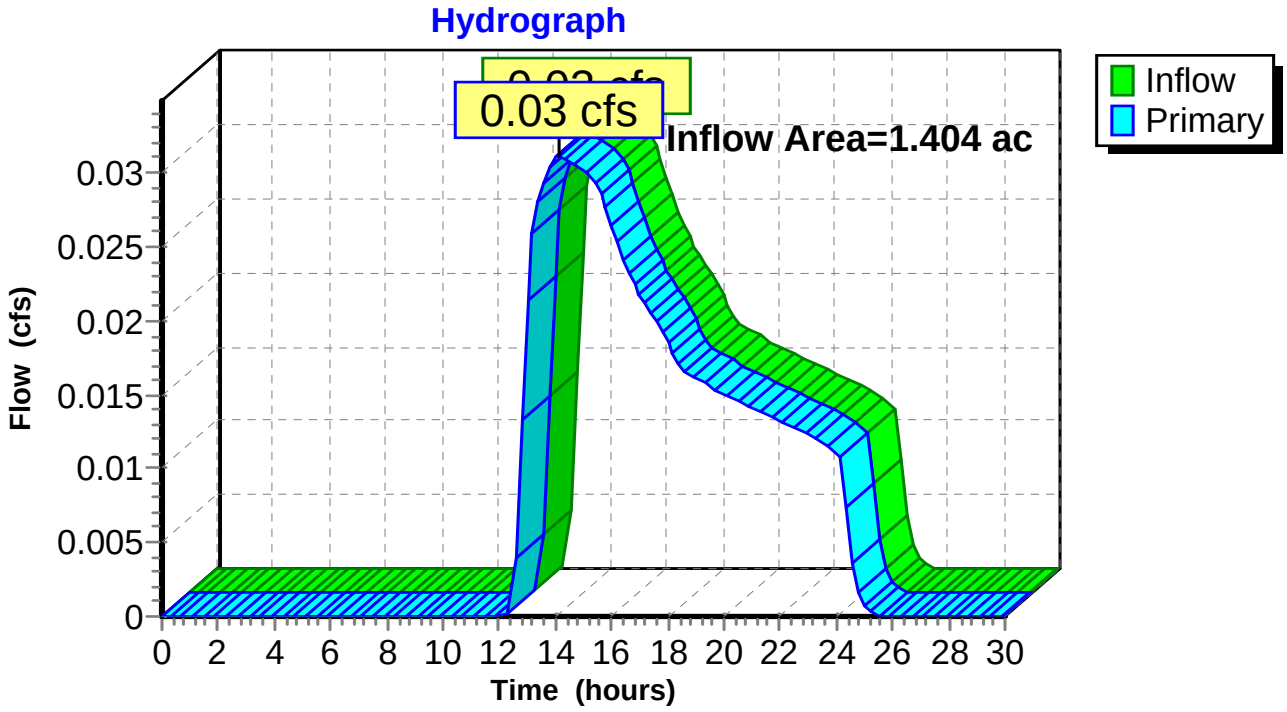


Summary for Link AP-2: AP-2

Inflow Area = 1.404 ac, 0.00% Impervious, Inflow Depth = 0.16" for 10-Year event
Inflow = 0.03 cfs @ 14.13 hrs, Volume= 0.019 af
Primary = 0.03 cfs @ 14.13 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-2: AP-2

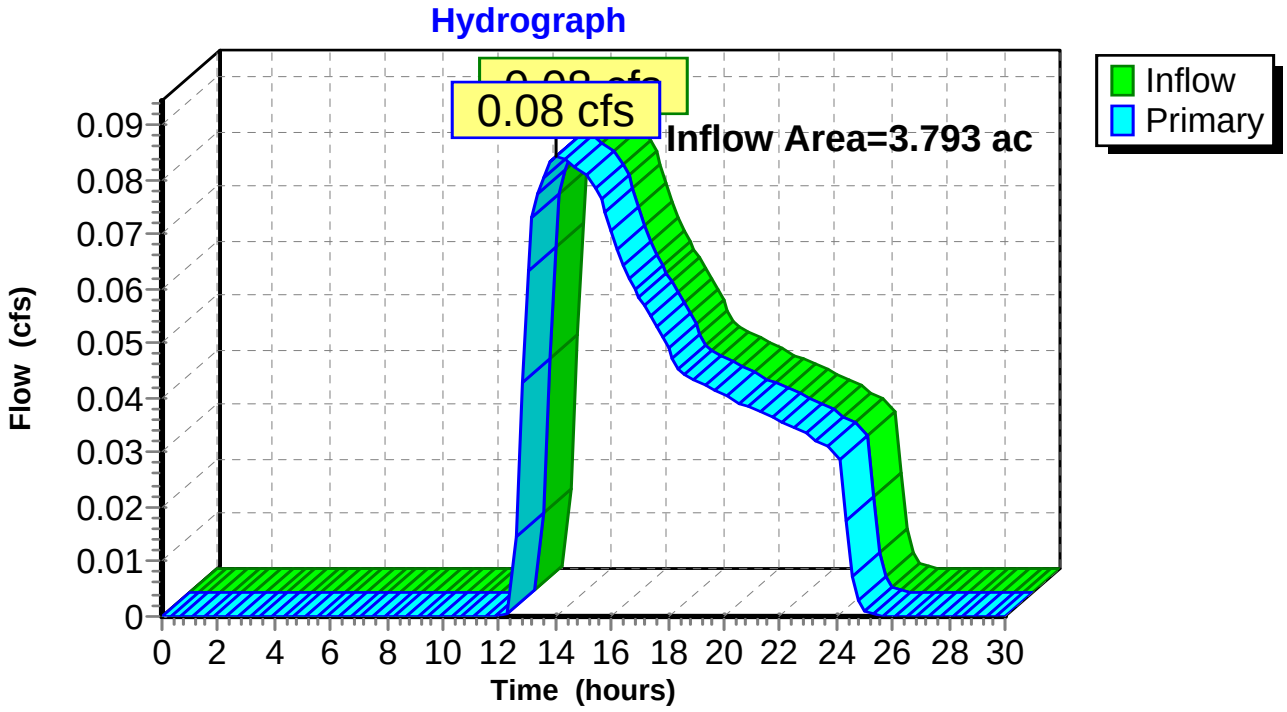


Summary for Link AP-3: AP-3

Inflow Area = 3.793 ac, 0.00% Impervious, Inflow Depth = 0.16" for 10-Year event
Inflow = 0.08 cfs @ 14.06 hrs, Volume= 0.051 af
Primary = 0.08 cfs @ 14.06 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-3: AP-3

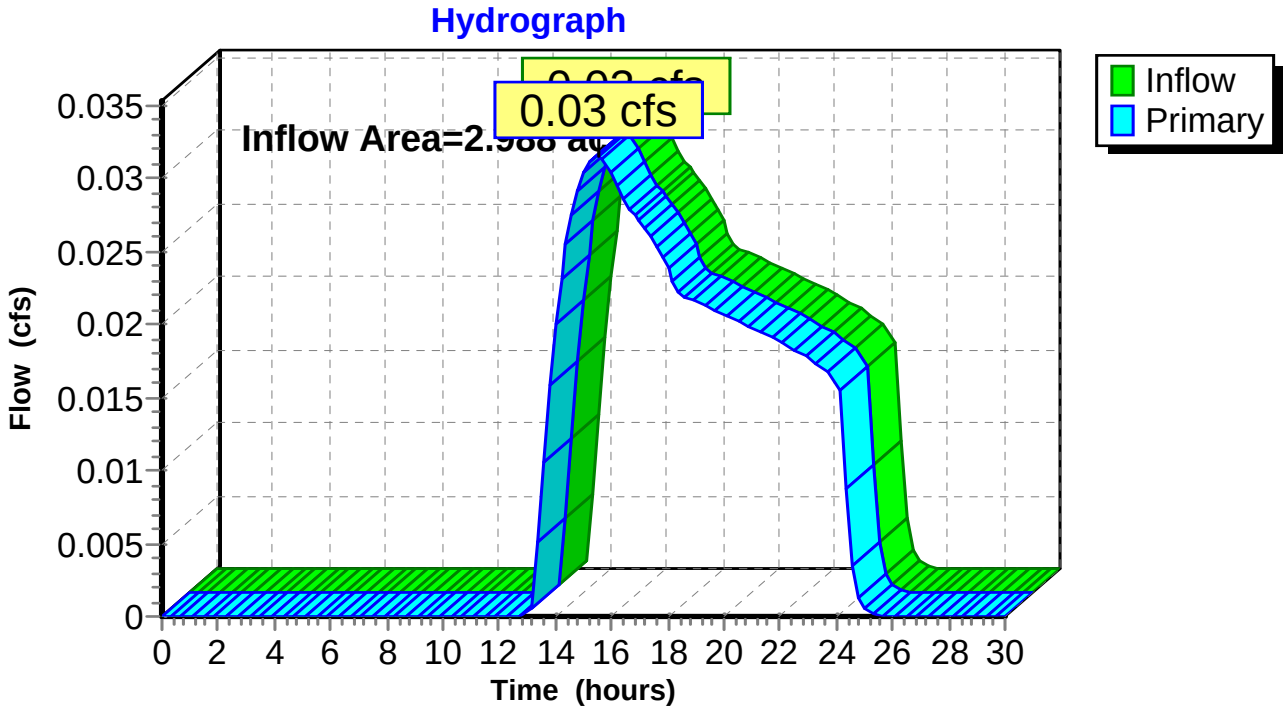


Summary for Link AP-4: AP-4

Inflow Area = 2.988 ac, 0.00% Impervious, Inflow Depth = 0.08" for 10-Year event
Inflow = 0.03 cfs @ 15.50 hrs, Volume= 0.020 af
Primary = 0.03 cfs @ 15.50 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-4: AP-4

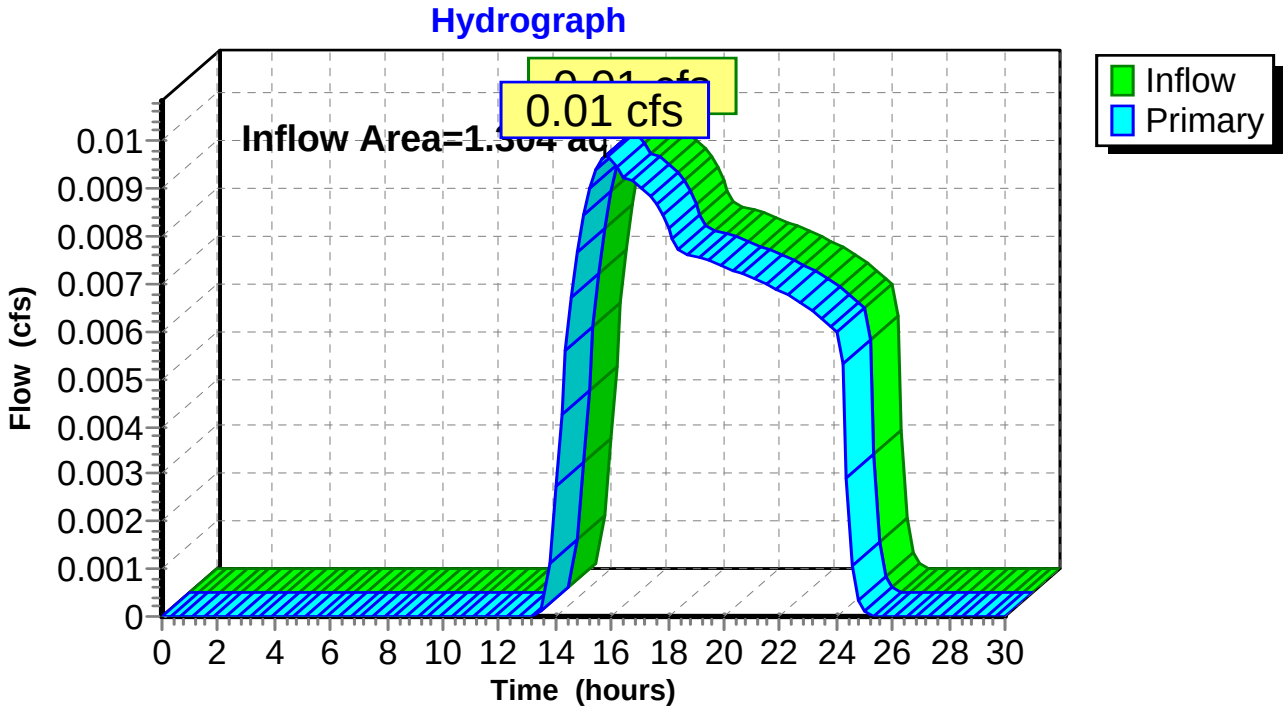


Summary for Link AP-5: AP-5

Inflow Area = 1.304 ac, 0.00% Impervious, Inflow Depth = 0.06" for 10-Year event
Inflow = 0.01 cfs @ 15.81 hrs, Volume= 0.007 af
Primary = 0.01 cfs @ 15.81 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-5: AP-5

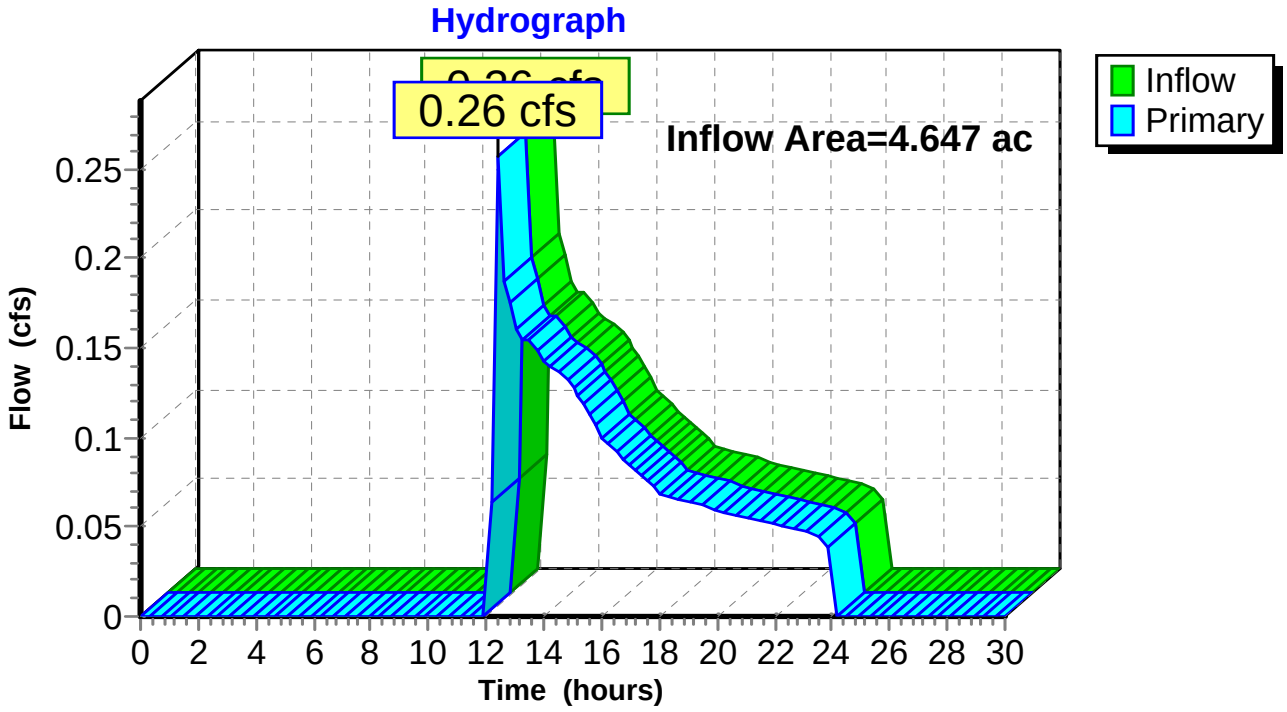


Summary for Link AP-6: AP-6

Inflow Area = 4.647 ac, 6.28% Impervious, Inflow Depth = 0.23" for 10-Year event
Inflow = 0.26 cfs @ 12.45 hrs, Volume= 0.088 af
Primary = 0.26 cfs @ 12.45 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-6: AP-6



Summary for Subcatchment EDA-1: EDA-1

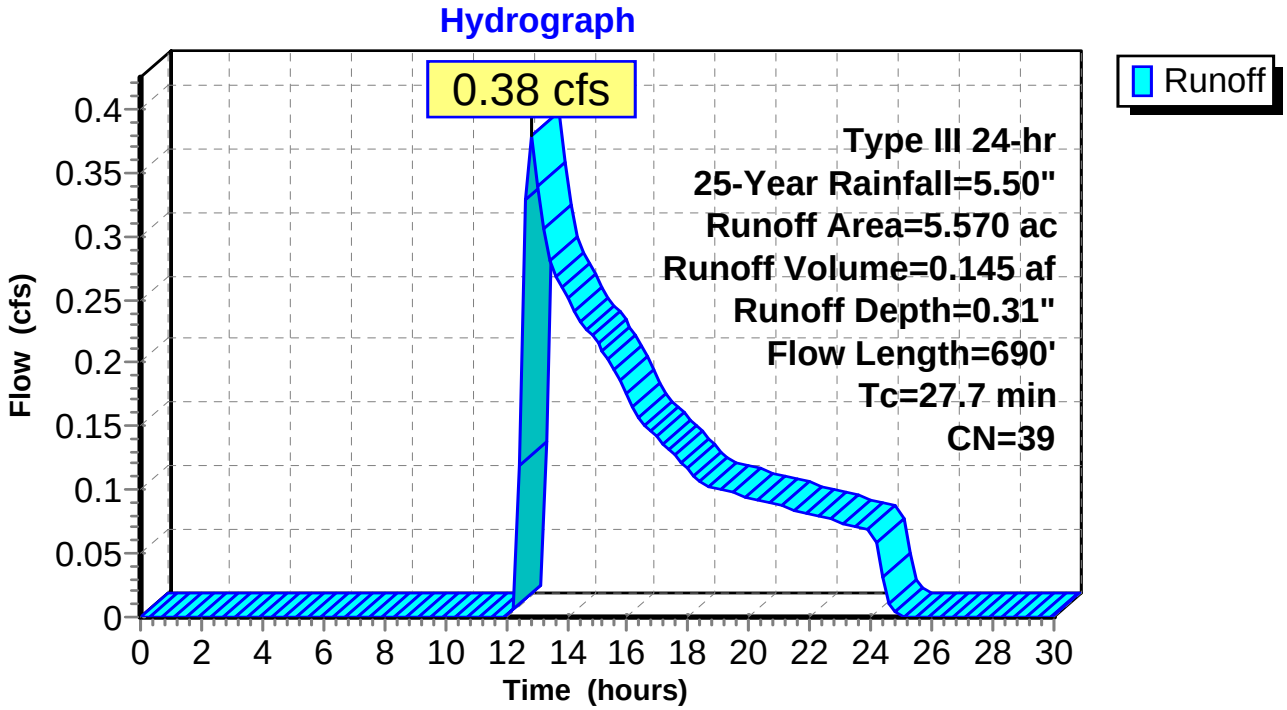
Runoff = 0.38 cfs @ 12.81 hrs, Volume= 0.145 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (ac)	CN	Description
5.570	39	Pasture/grassland/range, Good, HSG A
5.570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	150	0.0200	0.13		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
8.0	540	0.0260	1.13		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
27.7	690	Total			

Subcatchment EDA-1: EDA-1



Summary for Subcatchment EDA-2: EDA-2

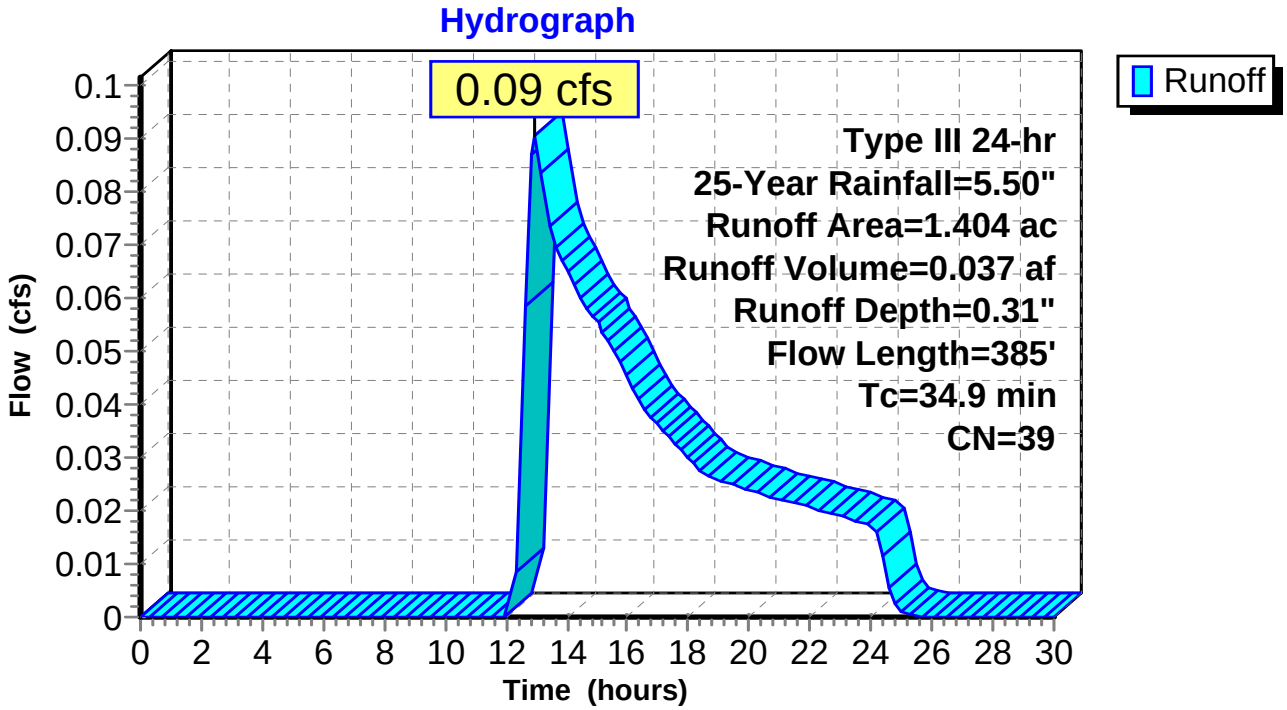
Runoff = 0.09 cfs @ 12.90 hrs, Volume= 0.037 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (ac)	CN	Description
1.404	39	Pasture/grassland/range, Good, HSG A
1.404		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.8	150	0.0066	0.08		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
4.1	235	0.0190	0.96		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
34.9	385	Total			

Subcatchment EDA-2: EDA-2



Summary for Subcatchment EDA-3: EDA-3

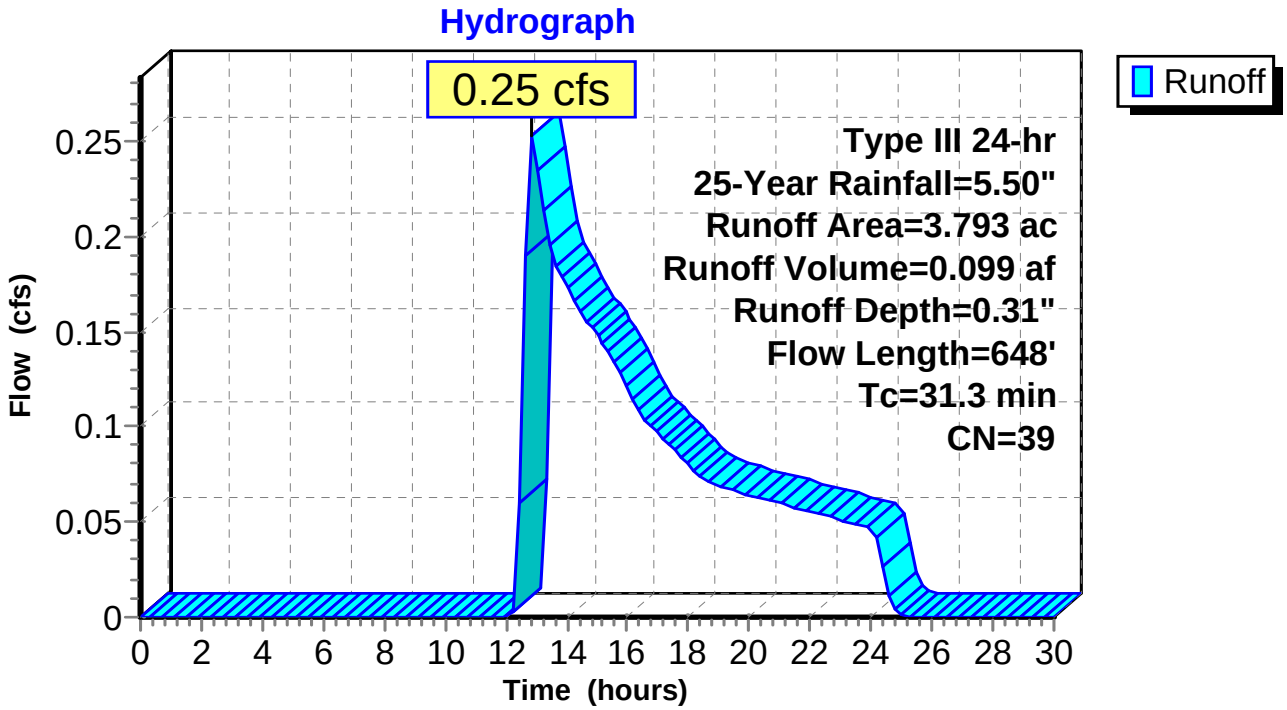
Runoff = 0.25 cfs @ 12.86 hrs, Volume= 0.099 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (ac)	CN	Description
3.793	39	Pasture/grassland/range, Good, HSG A
3.793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	100	0.1550	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
10.8	50	0.0100	0.08		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.20"
14.2	498	0.0070	0.59		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
31.3	648	Total			

Subcatchment EDA-3: EDA-3



Summary for Subcatchment EDA-4: EDA-4

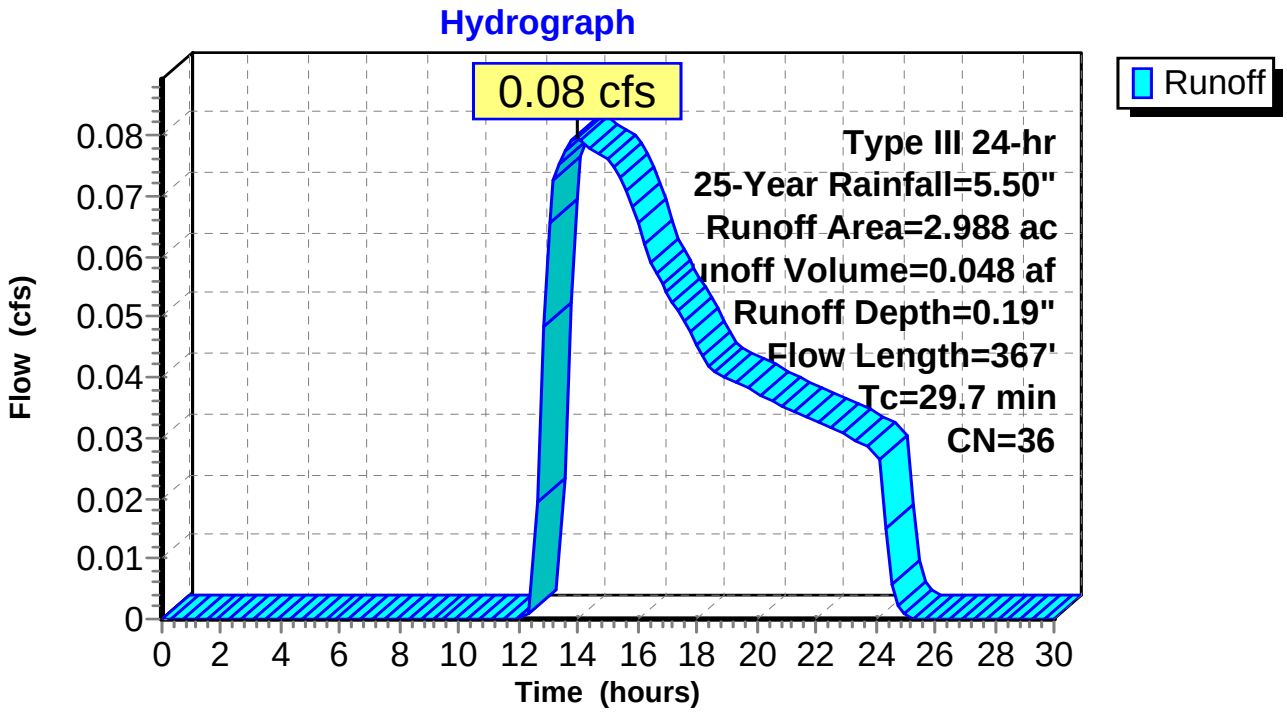
Runoff = 0.08 cfs @ 14.00 hrs, Volume= 0.048 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (ac)	CN	Description
2.080	39	Pasture/grassland/range, Good, HSG A
0.908	30	Woods, Good, HSG A
2.988	36	Weighted Average
2.988		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0100	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
3.5	187	0.0160	0.89		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.2	30	0.1660	2.04		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
29.7	367	Total			

Subcatchment EDA-4: EDA-4



Summary for Subcatchment EDA-5: EDA-5

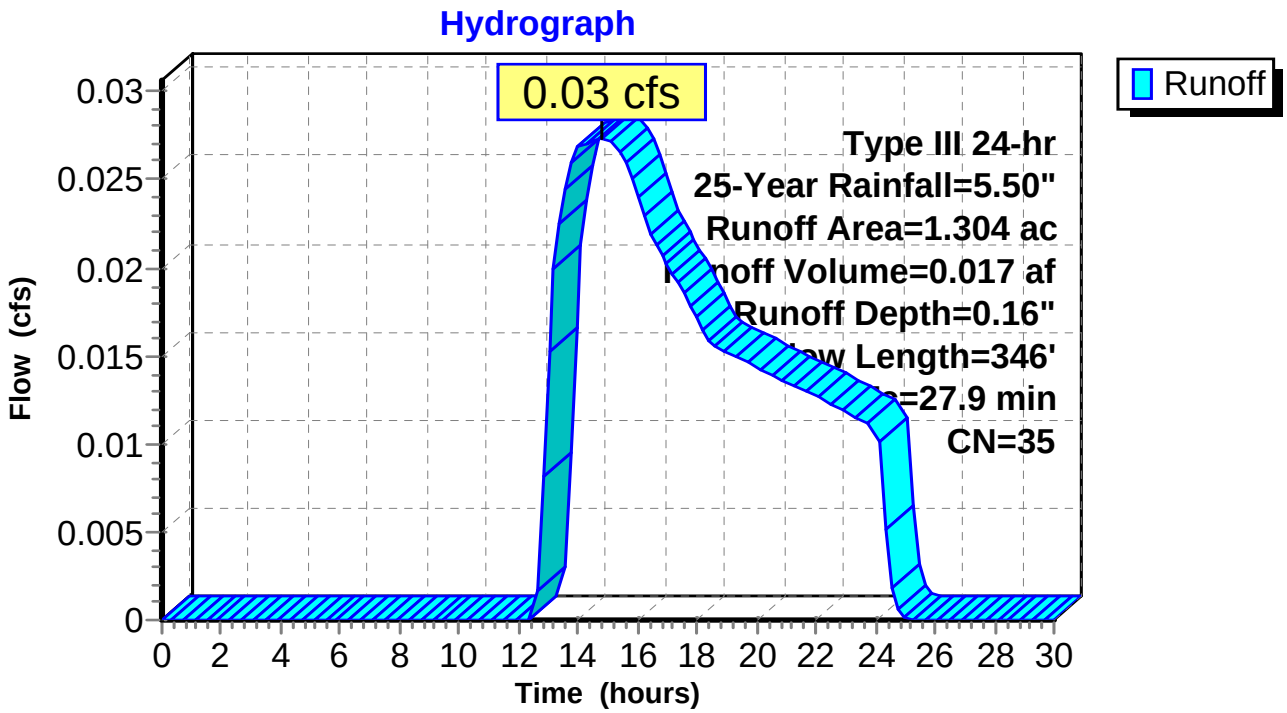
Runoff = 0.03 cfs @ 14.83 hrs, Volume= 0.017 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 25-Year Rainfall=5.50"

	Area (ac)	CN	Description
	0.749	39	Pasture/grassland/range, Good, HSG A
*	0.340	30	Woods, Good, HSG A
	0.215	30	Woods, Good, HSG A
	1.304	35	Weighted Average
	1.304		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0100	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
1.3	140	0.0640	1.77		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.6	56	0.0890	1.49		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
27.9	346	Total			

Subcatchment EDA-5: EDA-5



Summary for Subcatchment EDA-6: EDA-6

[49] Hint: Tc<2dt may require smaller dt

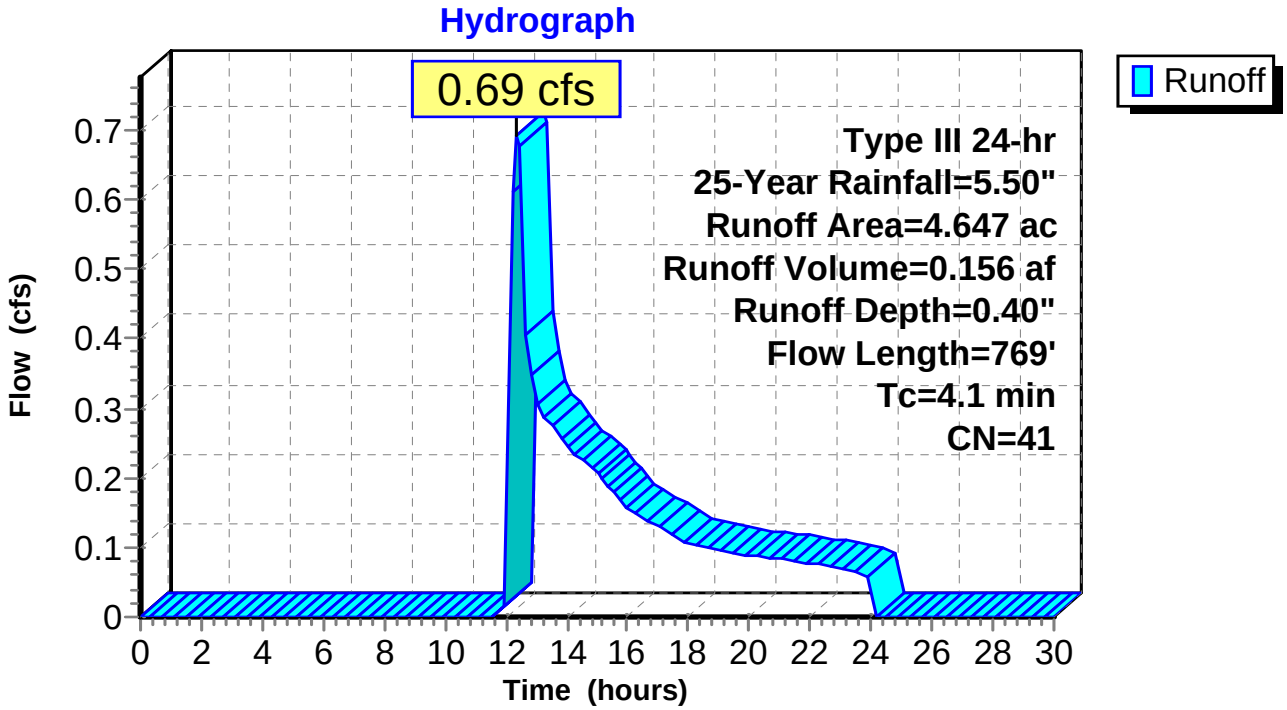
Runoff = 0.69 cfs @ 12.34 hrs, Volume= 0.156 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (ac)	CN	Description
0.292	98	Paved parking, HSG B
0.189	96	Gravel surface, HSG A
1.887	30	Woods, Good, HSG A
2.279	39	Pasture/grassland/range, Good, HSG A
4.647	41	Weighted Average
4.355		93.72% Pervious Area
0.292		6.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	150	0.0200	1.49		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.20"
0.7	149	0.0333	3.70		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.7	223	0.1430	5.67		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
1.0	247	0.0800	4.24		**Shallow Concentrated Flow, D-E** Grassed Waterway Kv= 15.0 fps
4.1	769	Total			

Subcatchment EDA-6: EDA-6

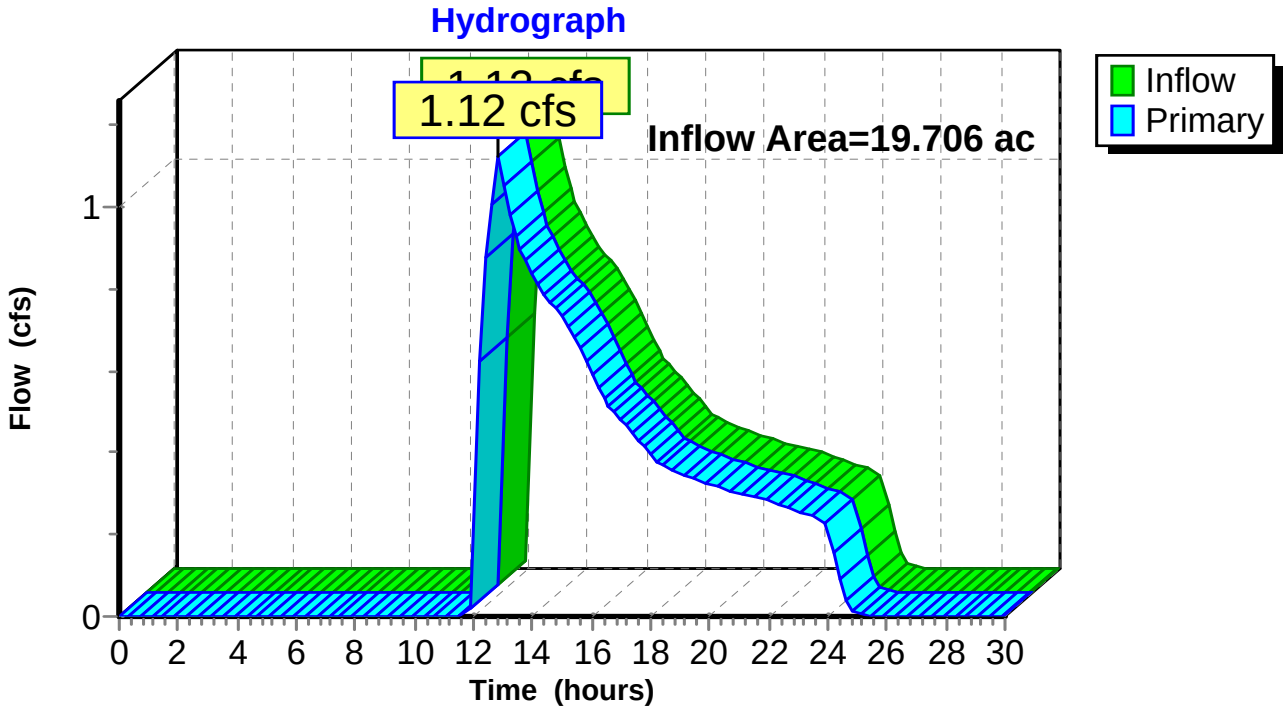


Summary for Link 1L: Quinnatisset Brook

Inflow Area = 19.706 ac, 1.48% Impervious, Inflow Depth = 0.31" for 25-Year event
Inflow = 1.12 cfs @ 12.82 hrs, Volume= 0.501 af
Primary = 1.12 cfs @ 12.82 hrs, Volume= 0.501 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link 1L: Quinnatisset Brook

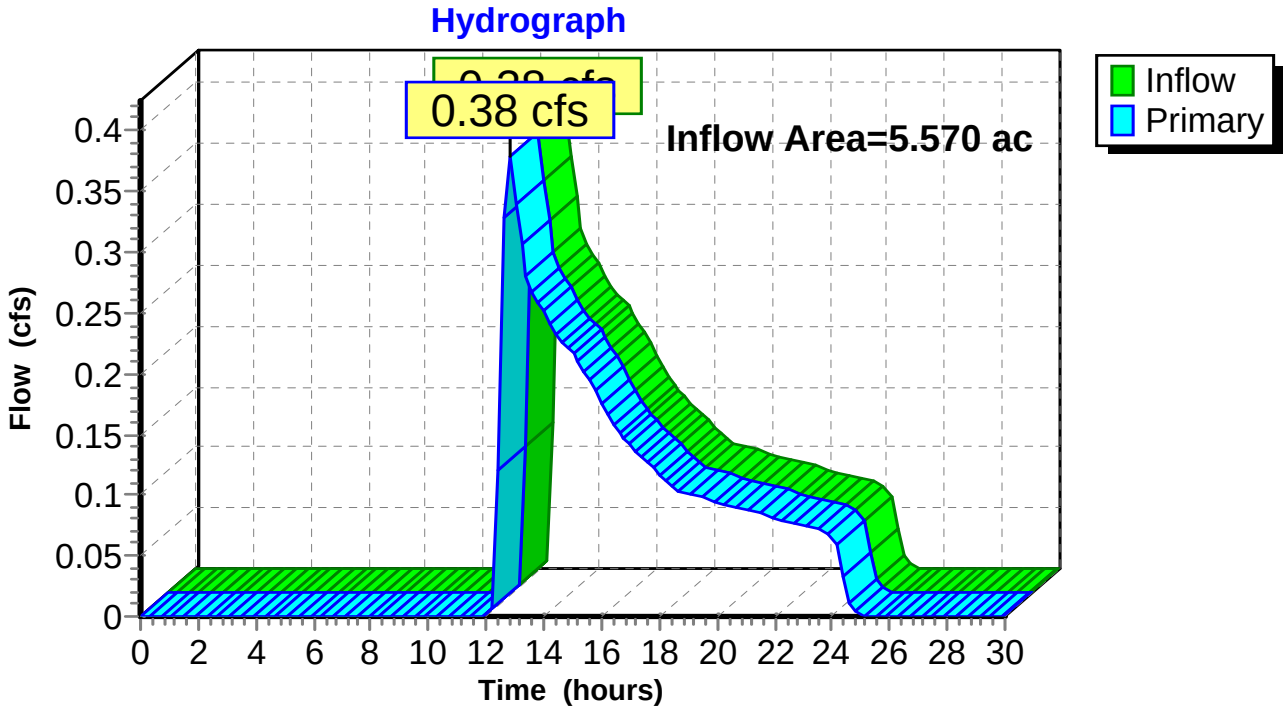


Summary for Link AP-1: AP-1

Inflow Area = 5.570 ac, 0.00% Impervious, Inflow Depth = 0.31" for 25-Year event
Inflow = 0.38 cfs @ 12.81 hrs, Volume= 0.145 af
Primary = 0.38 cfs @ 12.81 hrs, Volume= 0.145 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-1: AP-1

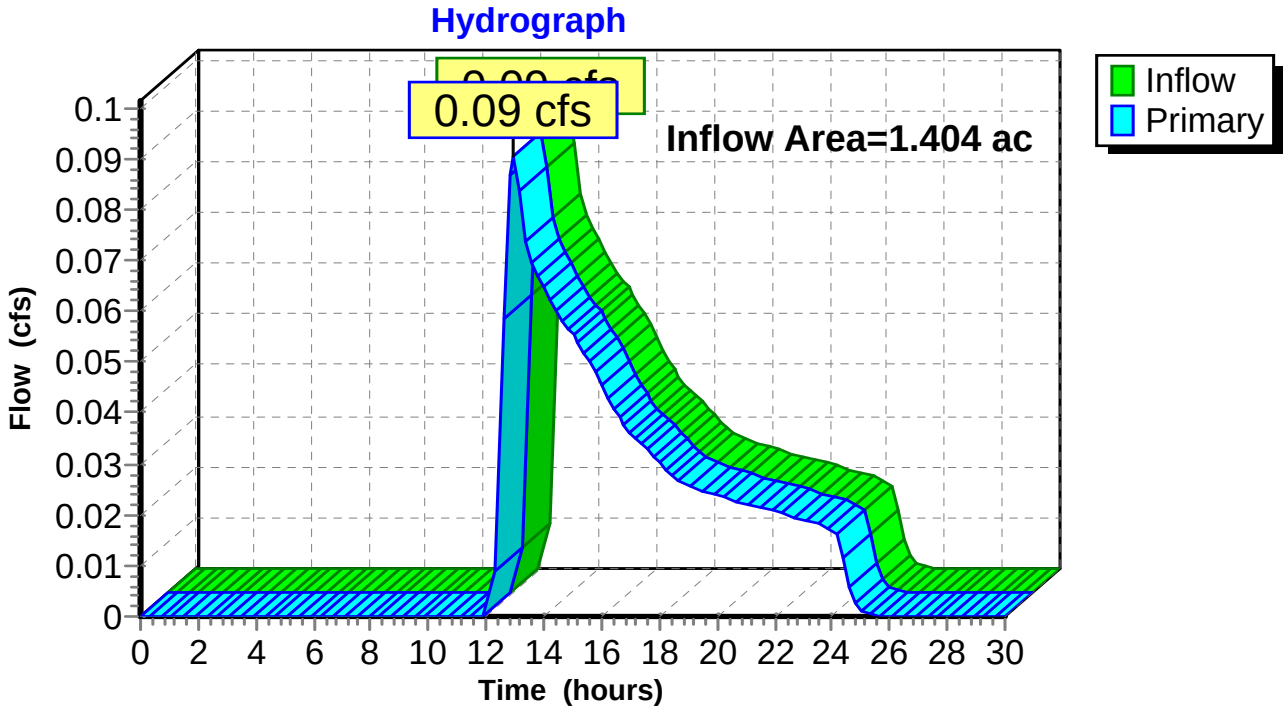


Summary for Link AP-2: AP-2

Inflow Area = 1.404 ac, 0.00% Impervious, Inflow Depth = 0.31" for 25-Year event
Inflow = 0.09 cfs @ 12.90 hrs, Volume= 0.037 af
Primary = 0.09 cfs @ 12.90 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-2: AP-2

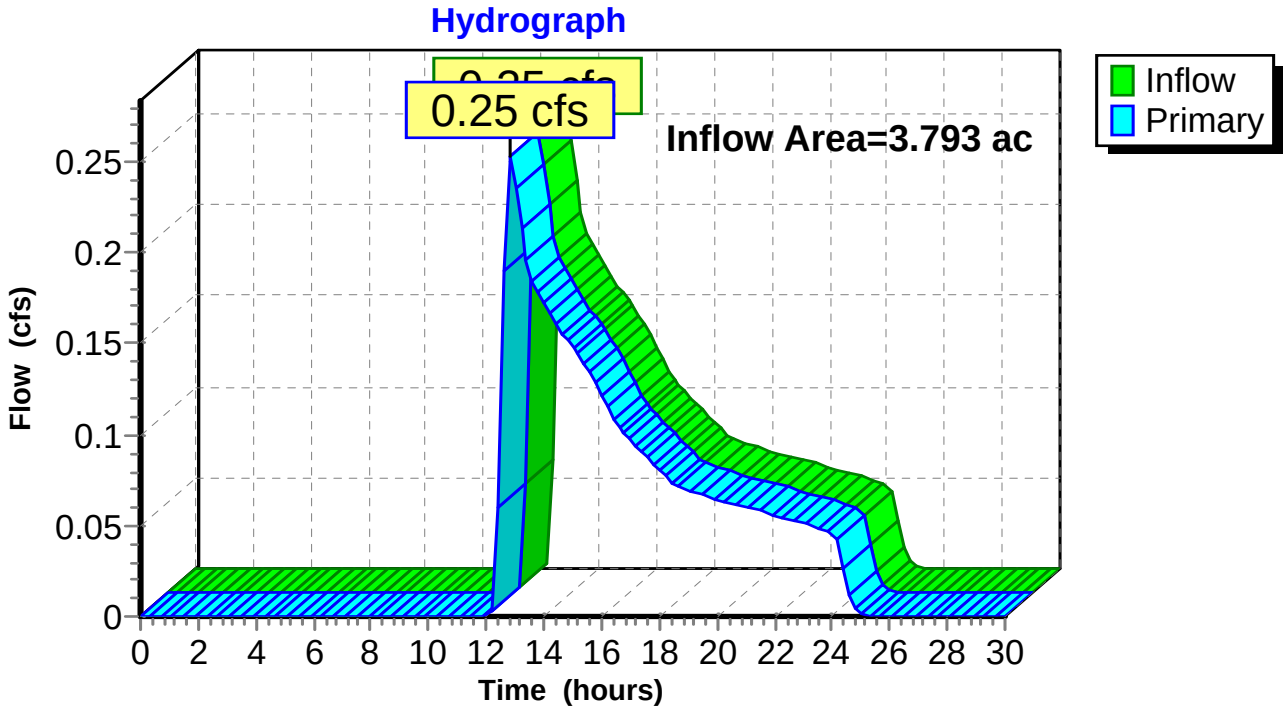


Summary for Link AP-3: AP-3

Inflow Area = 3.793 ac, 0.00% Impervious, Inflow Depth = 0.31" for 25-Year event
Inflow = 0.25 cfs @ 12.86 hrs, Volume= 0.099 af
Primary = 0.25 cfs @ 12.86 hrs, Volume= 0.099 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-3: AP-3

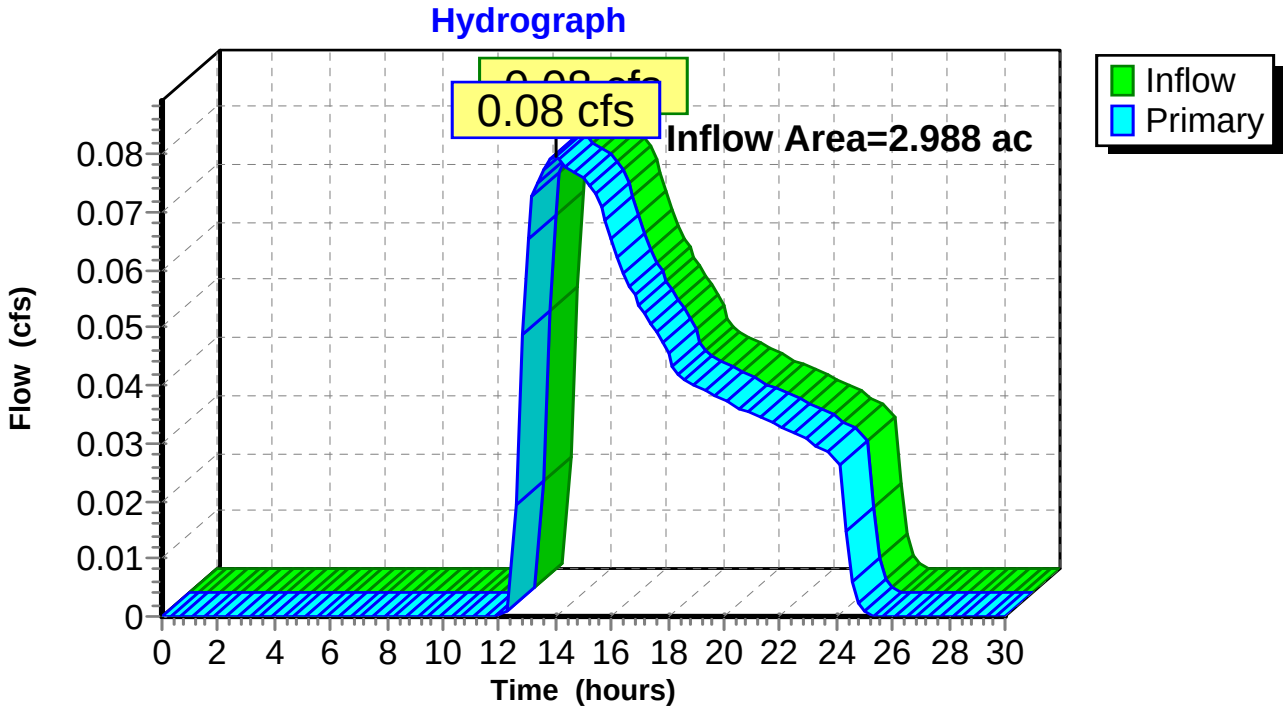


Summary for Link AP-4: AP-4

Inflow Area = 2.988 ac, 0.00% Impervious, Inflow Depth = 0.19" for 25-Year event
Inflow = 0.08 cfs @ 14.00 hrs, Volume= 0.048 af
Primary = 0.08 cfs @ 14.00 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-4: AP-4

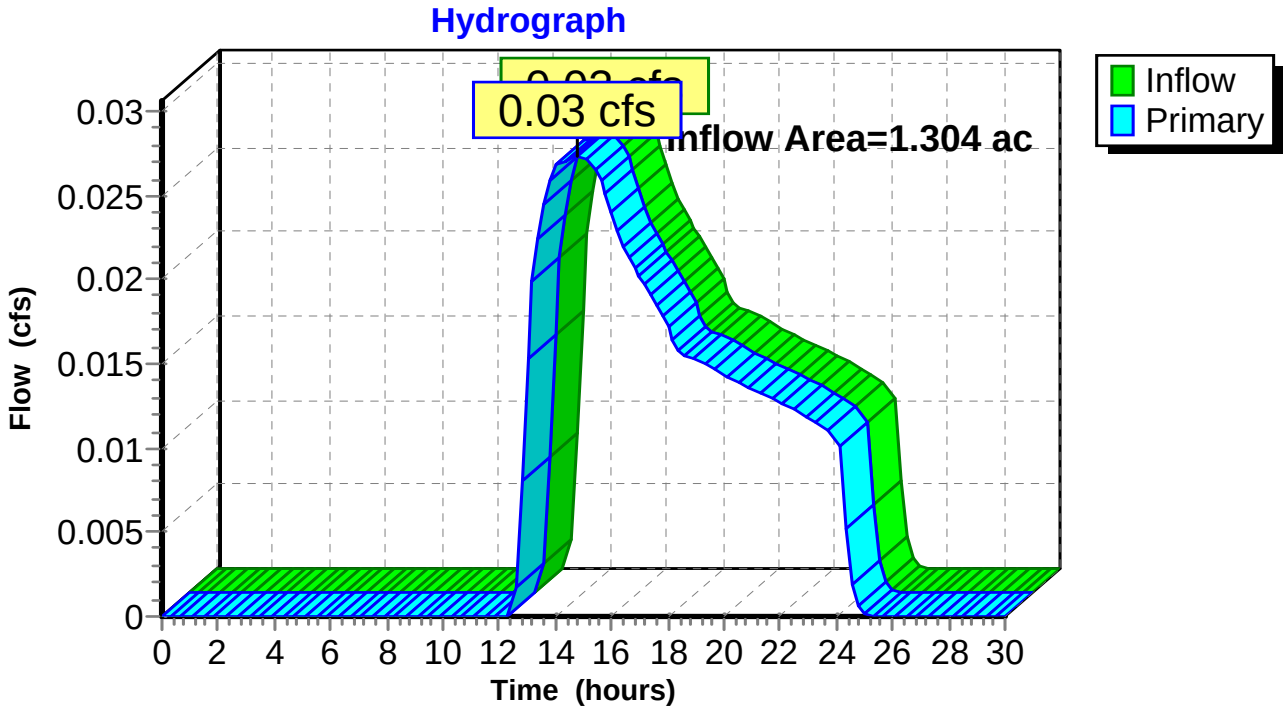


Summary for Link AP-5: AP-5

Inflow Area = 1.304 ac, 0.00% Impervious, Inflow Depth = 0.16" for 25-Year event
Inflow = 0.03 cfs @ 14.83 hrs, Volume= 0.017 af
Primary = 0.03 cfs @ 14.83 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-5: AP-5

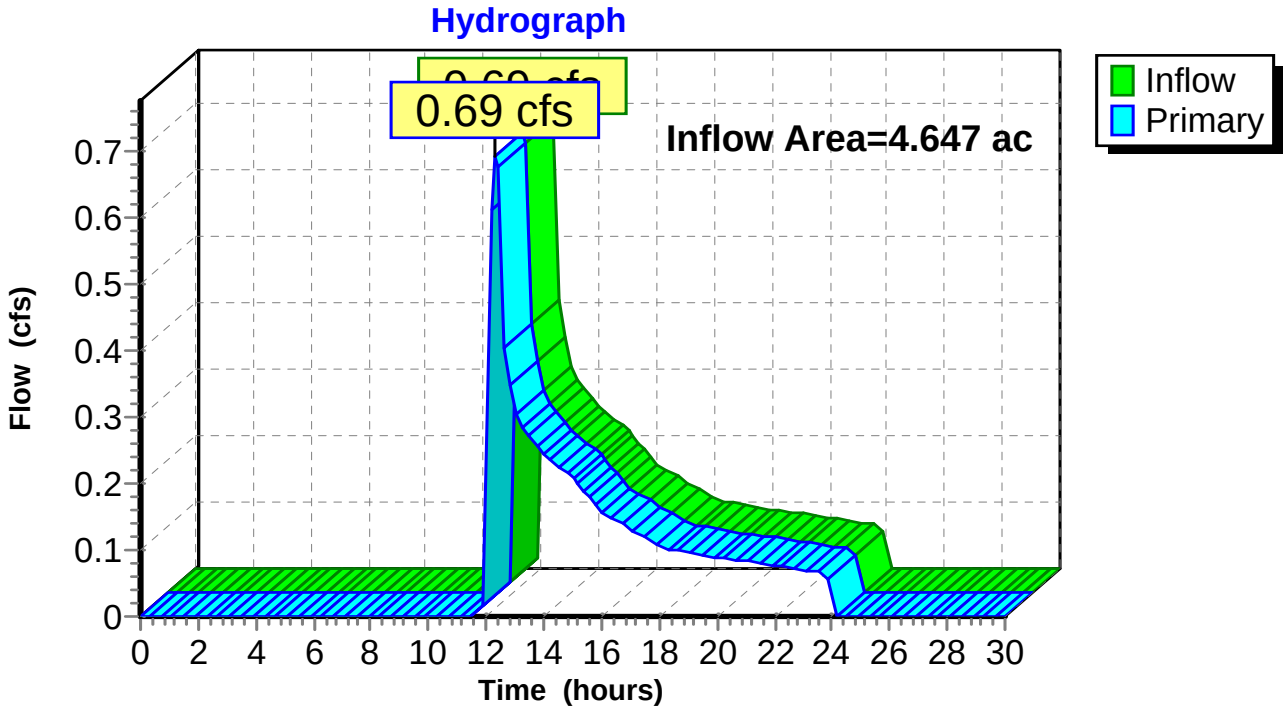


Summary for Link AP-6: AP-6

Inflow Area = 4.647 ac, 6.28% Impervious, Inflow Depth = 0.40" for 25-Year event
Inflow = 0.69 cfs @ 12.34 hrs, Volume= 0.156 af
Primary = 0.69 cfs @ 12.34 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-6: AP-6



Summary for Subcatchment EDA-1: EDA-1

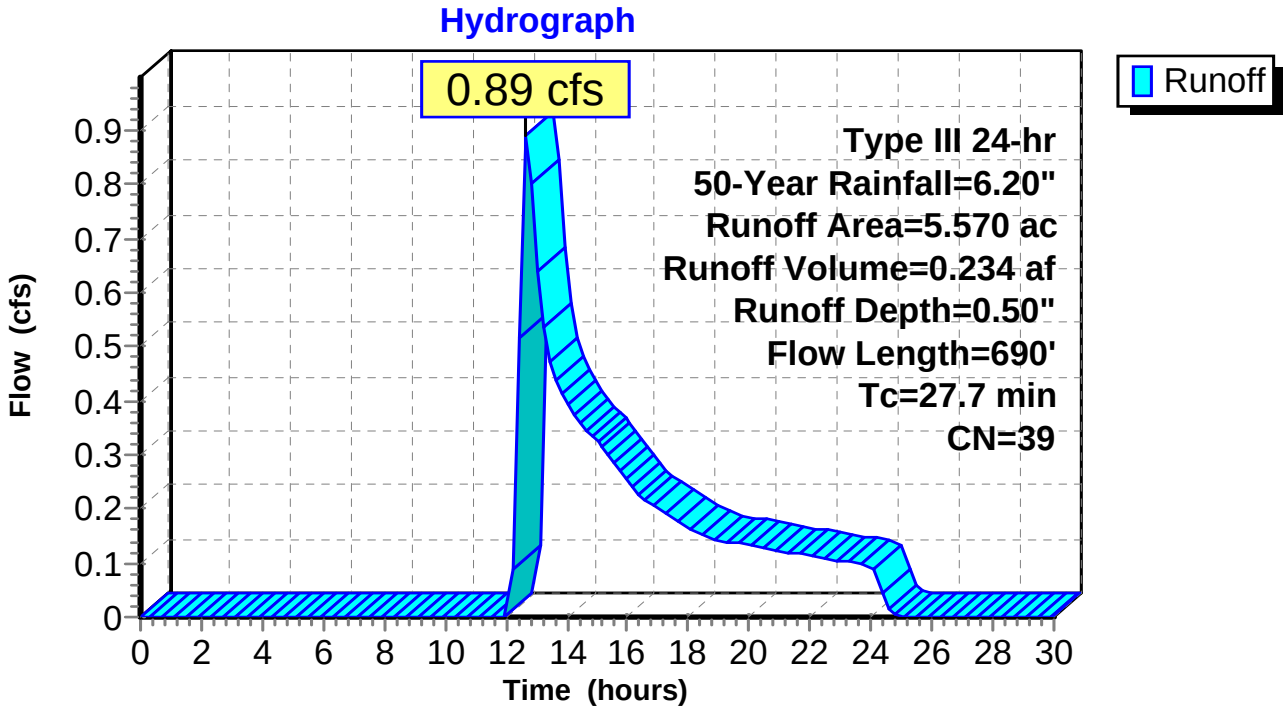
Runoff = 0.89 cfs @ 12.67 hrs, Volume= 0.234 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 50-Year Rainfall=6.20"

Area (ac)	CN	Description
5.570	39	Pasture/grassland/range, Good, HSG A
5.570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	150	0.0200	0.13		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
8.0	540	0.0260	1.13		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
27.7	690	Total			

Subcatchment EDA-1: EDA-1



Summary for Subcatchment EDA-2: EDA-2

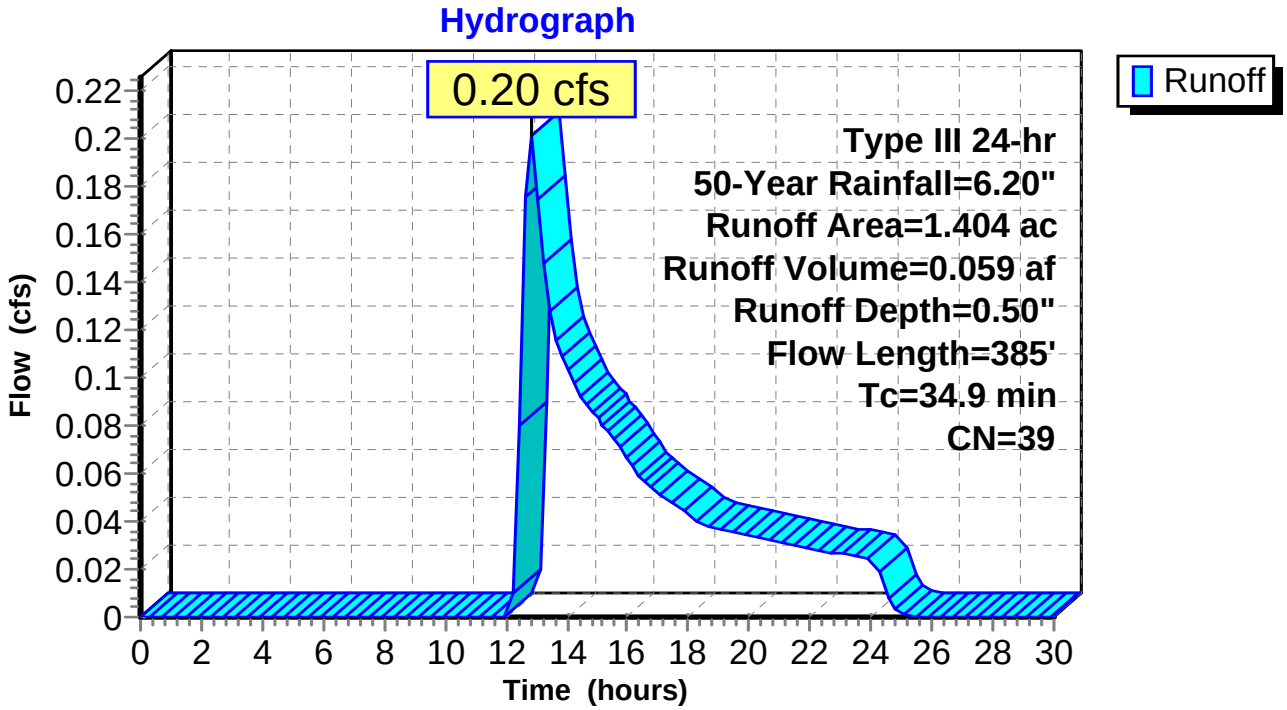
Runoff = 0.20 cfs @ 12.80 hrs, Volume= 0.059 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 50-Year Rainfall=6.20"

Area (ac)	CN	Description
1.404	39	Pasture/grassland/range, Good, HSG A
1.404		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.8	150	0.0066	0.08		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
4.1	235	0.0190	0.96		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
34.9	385	Total			

Subcatchment EDA-2: EDA-2



Summary for Subcatchment EDA-3: EDA-3

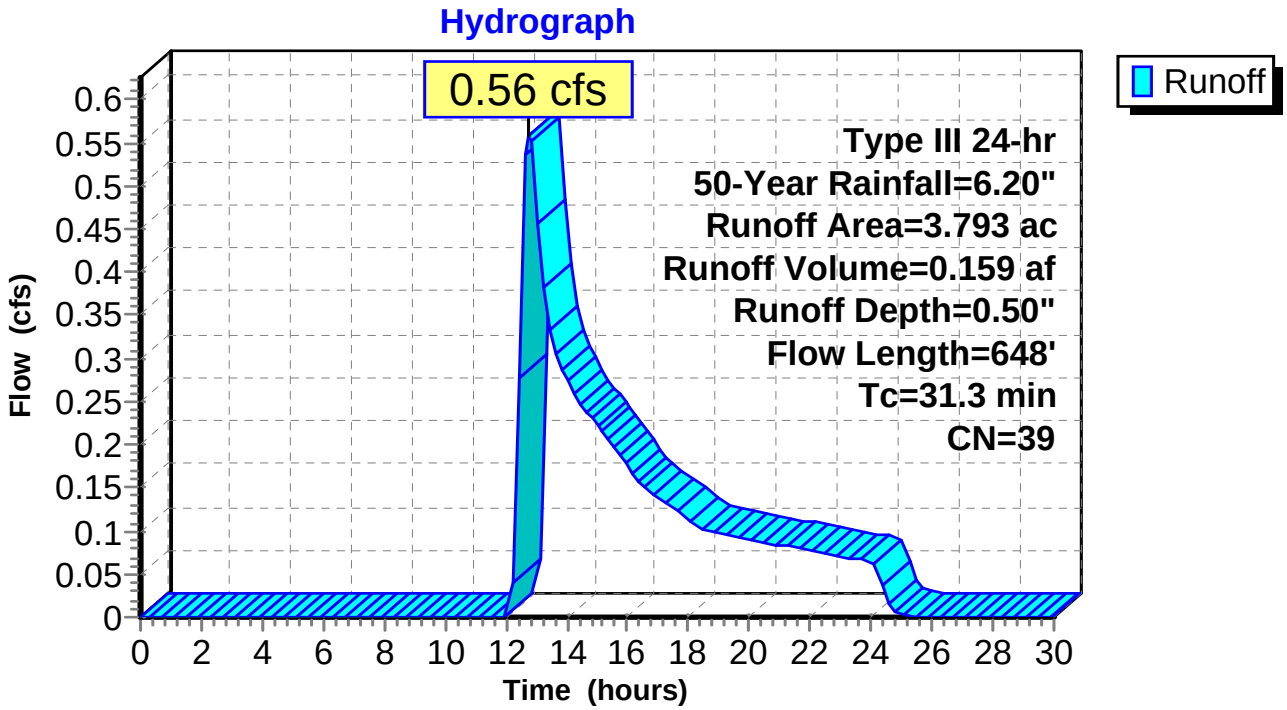
Runoff = 0.56 cfs @ 12.73 hrs, Volume= 0.159 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 50-Year Rainfall=6.20"

Area (ac)	CN	Description
3.793	39	Pasture/grassland/range, Good, HSG A
3.793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	100	0.1550	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
10.8	50	0.0100	0.08		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.20"
14.2	498	0.0070	0.59		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
31.3	648	Total			

Subcatchment EDA-3: EDA-3



Summary for Subcatchment EDA-4: EDA-4

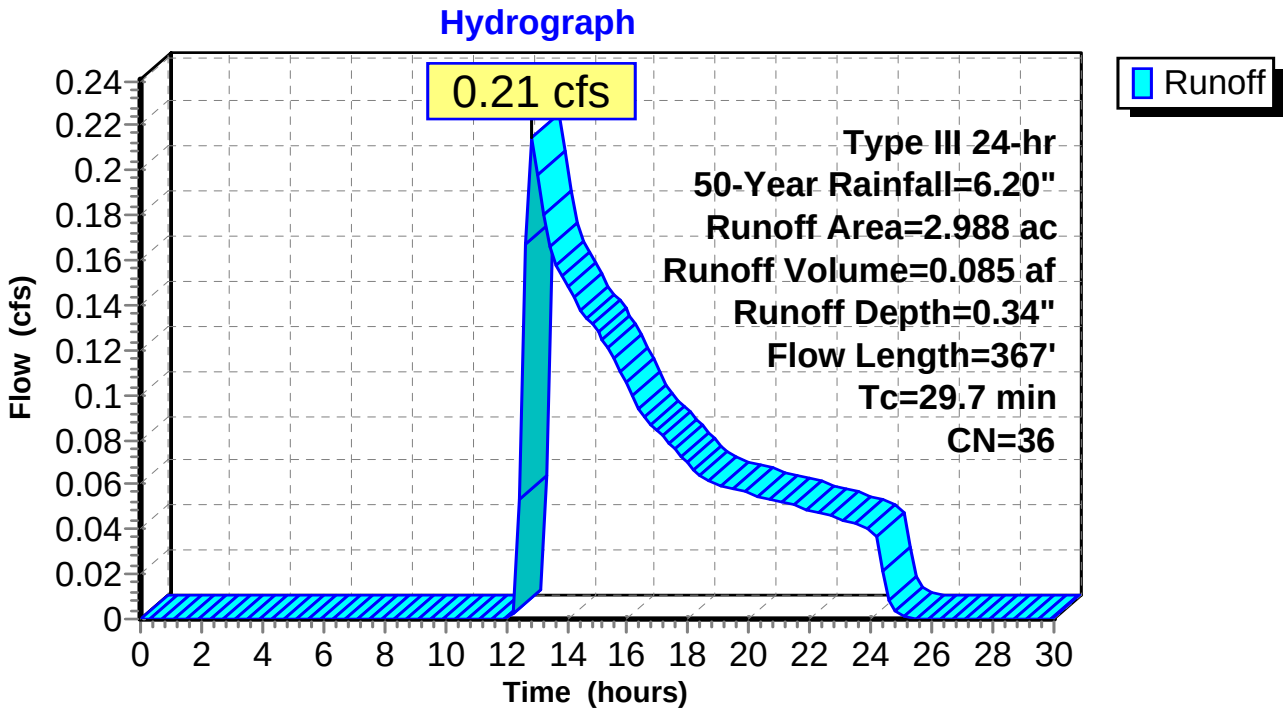
Runoff = 0.21 cfs @ 12.85 hrs, Volume= 0.085 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 50-Year Rainfall=6.20"

Area (ac)	CN	Description
2.080	39	Pasture/grassland/range, Good, HSG A
0.908	30	Woods, Good, HSG A
2.988	36	Weighted Average
2.988		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0100	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
3.5	187	0.0160	0.89		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.2	30	0.1660	2.04		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
29.7	367	Total			

Subcatchment EDA-4: EDA-4



Summary for Subcatchment EDA-5: EDA-5

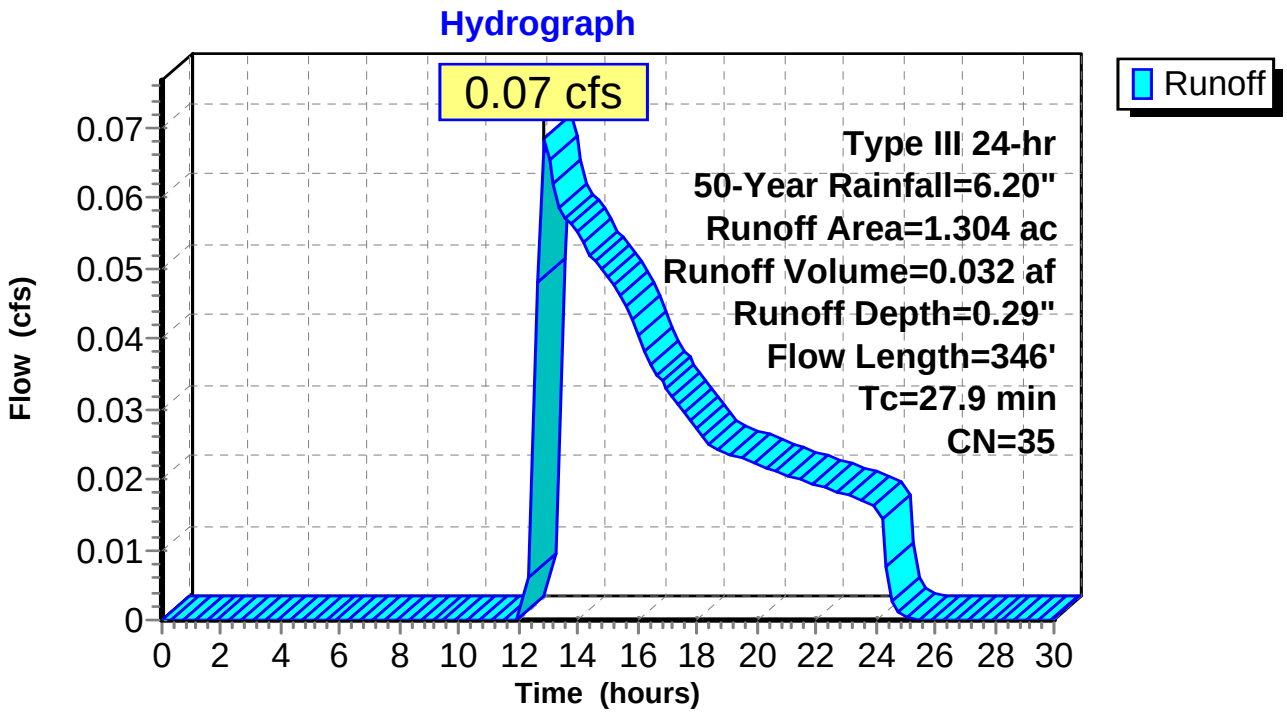
Runoff = 0.07 cfs @ 12.89 hrs, Volume= 0.032 af, Depth= 0.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 50-Year Rainfall=6.20"

	Area (ac)	CN	Description
	0.749	39	Pasture/grassland/range, Good, HSG A
*	0.340	30	Woods, Good, HSG A
	0.215	30	Woods, Good, HSG A
	1.304	35	Weighted Average
	1.304		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0100	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
1.3	140	0.0640	1.77		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.6	56	0.0890	1.49		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
27.9	346	Total			

Subcatchment EDA-5: EDA-5



Summary for Subcatchment EDA-6: EDA-6

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.49 cfs @ 12.26 hrs, Volume= 0.241 af, Depth= 0.62"

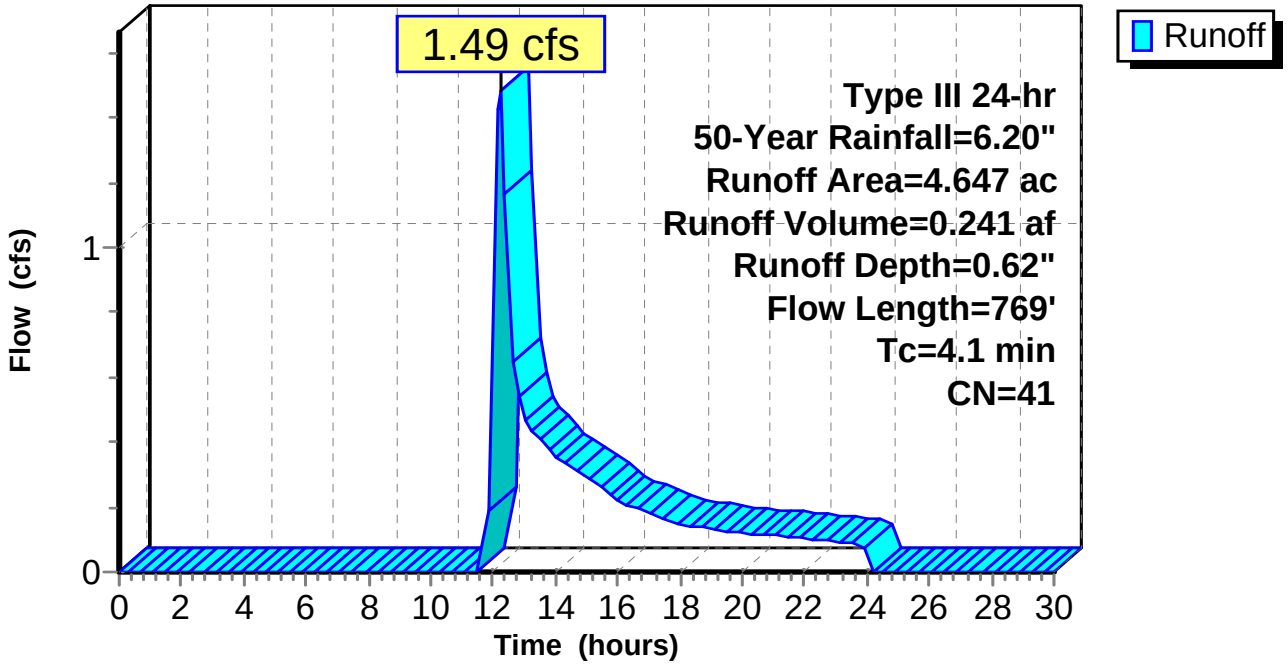
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 50-Year Rainfall=6.20"

Area (ac)	CN	Description
0.292	98	Paved parking, HSG B
0.189	96	Gravel surface, HSG A
1.887	30	Woods, Good, HSG A
2.279	39	Pasture/grassland/range, Good, HSG A
4.647	41	Weighted Average
4.355		93.72% Pervious Area
0.292		6.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	150	0.0200	1.49		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.20"
0.7	149	0.0333	3.70		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.7	223	0.1430	5.67		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
1.0	247	0.0800	4.24		**Shallow Concentrated Flow, D-E** Grassed Waterway Kv= 15.0 fps
4.1	769	Total			

Subcatchment EDA-6: EDA-6

Hydrograph

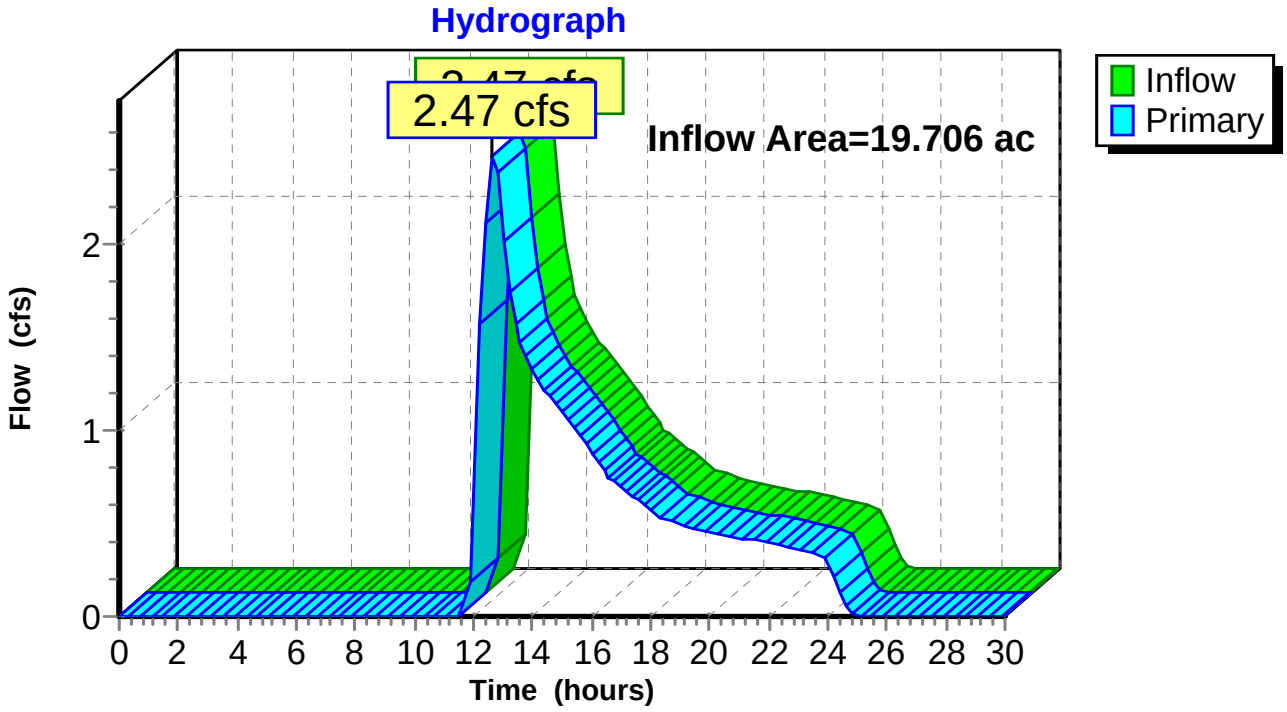


Summary for Link 1L: Quinnatisset Brook

Inflow Area = 19.706 ac, 1.48% Impervious, Inflow Depth = 0.49" for 50-Year event
Inflow = 2.47 cfs @ 12.67 hrs, Volume= 0.811 af
Primary = 2.47 cfs @ 12.67 hrs, Volume= 0.811 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link 1L: Quinnatisset Brook

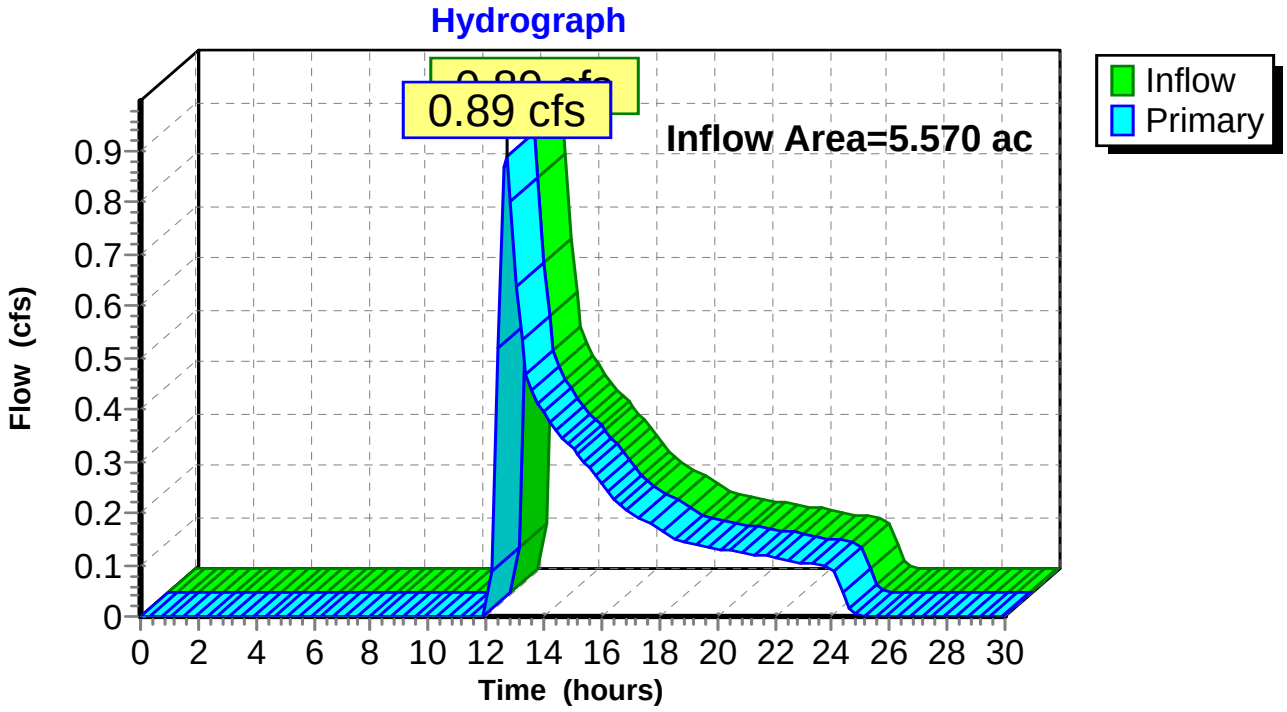


Summary for Link AP-1: AP-1

Inflow Area = 5.570 ac, 0.00% Impervious, Inflow Depth = 0.50" for 50-Year event
Inflow = 0.89 cfs @ 12.67 hrs, Volume= 0.234 af
Primary = 0.89 cfs @ 12.67 hrs, Volume= 0.234 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-1: AP-1

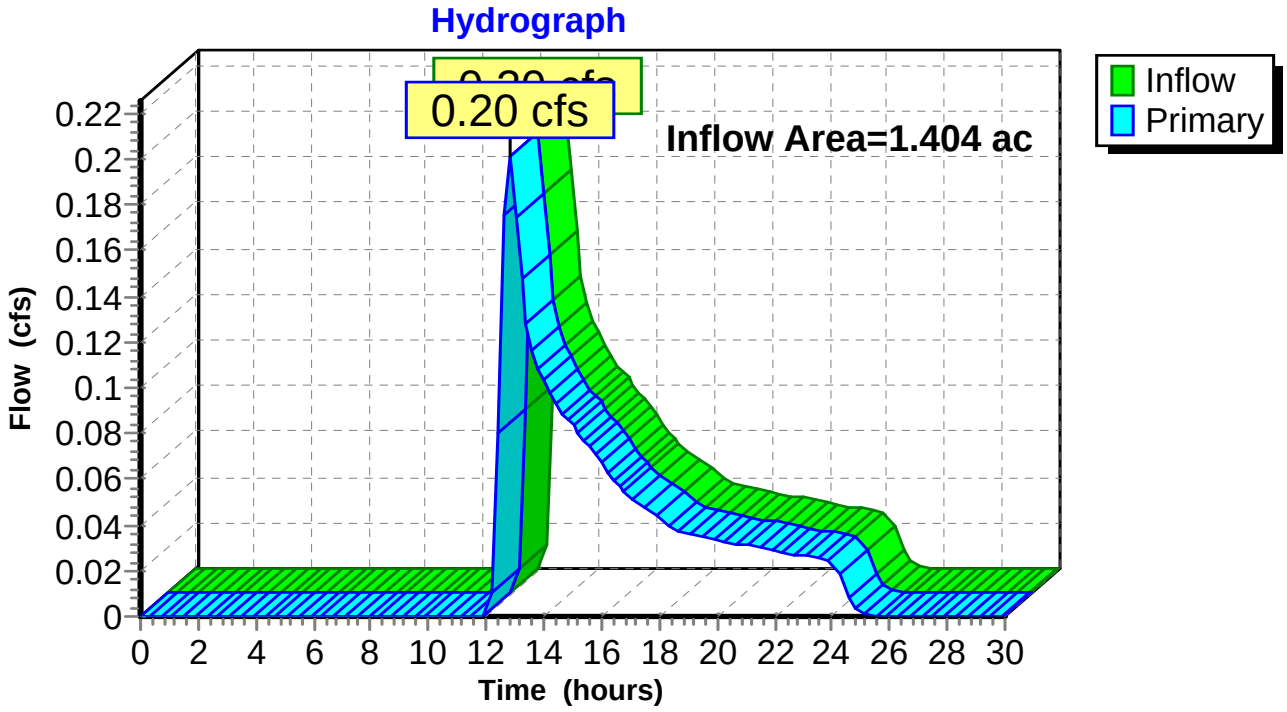


Summary for Link AP-2: AP-2

Inflow Area = 1.404 ac, 0.00% Impervious, Inflow Depth = 0.50" for 50-Year event
Inflow = 0.20 cfs @ 12.80 hrs, Volume= 0.059 af
Primary = 0.20 cfs @ 12.80 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-2: AP-2

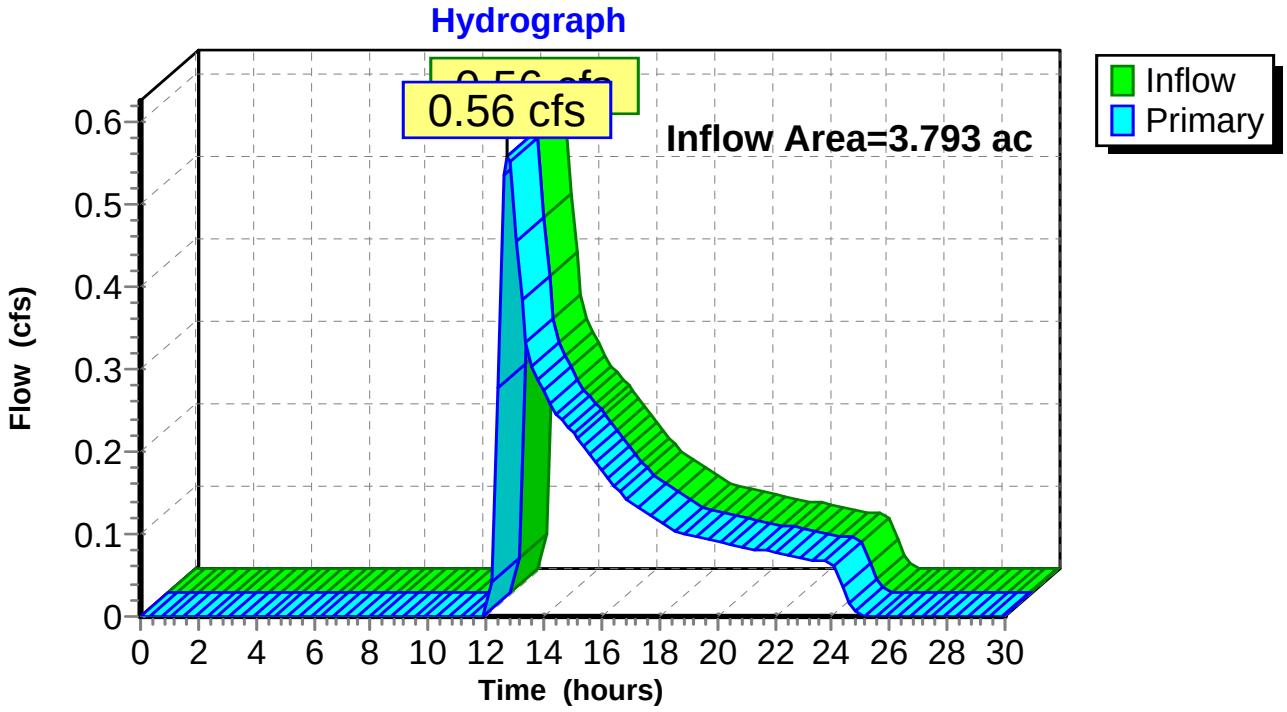


Summary for Link AP-3: AP-3

Inflow Area = 3.793 ac, 0.00% Impervious, Inflow Depth = 0.50" for 50-Year event
Inflow = 0.56 cfs @ 12.73 hrs, Volume= 0.159 af
Primary = 0.56 cfs @ 12.73 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-3: AP-3

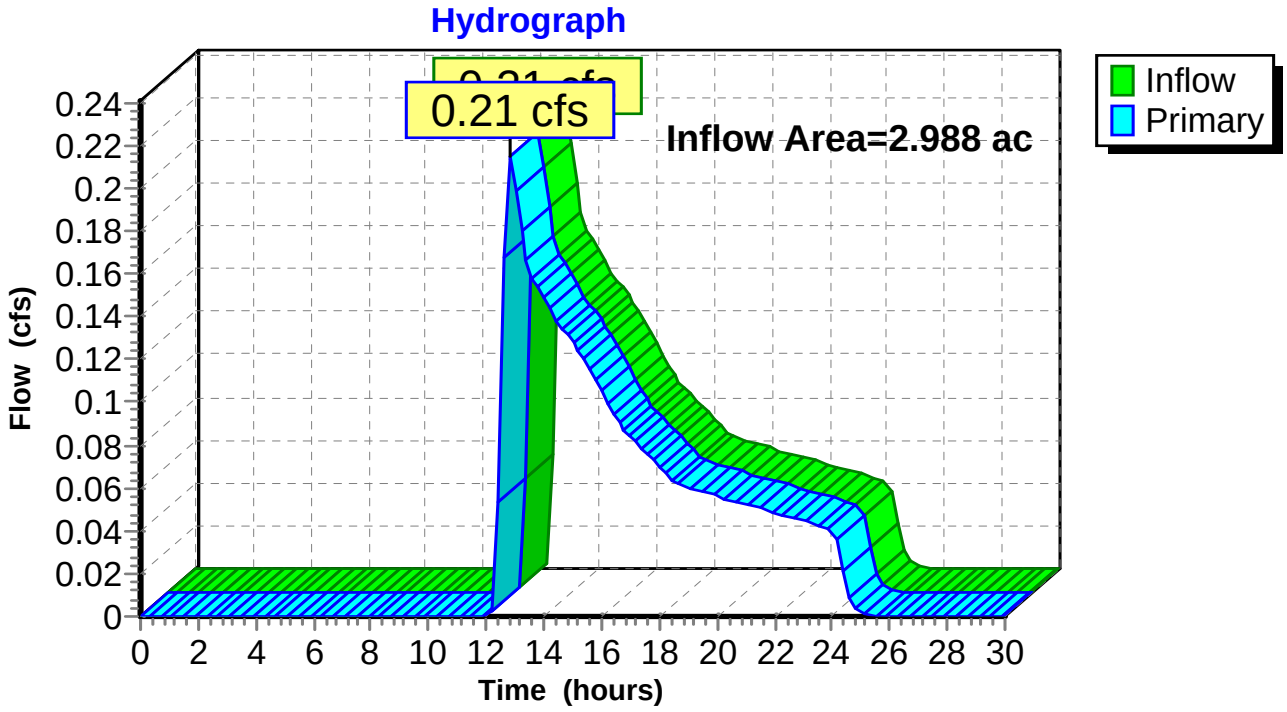


Summary for Link AP-4: AP-4

Inflow Area = 2.988 ac, 0.00% Impervious, Inflow Depth = 0.34" for 50-Year event
Inflow = 0.21 cfs @ 12.85 hrs, Volume= 0.085 af
Primary = 0.21 cfs @ 12.85 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-4: AP-4

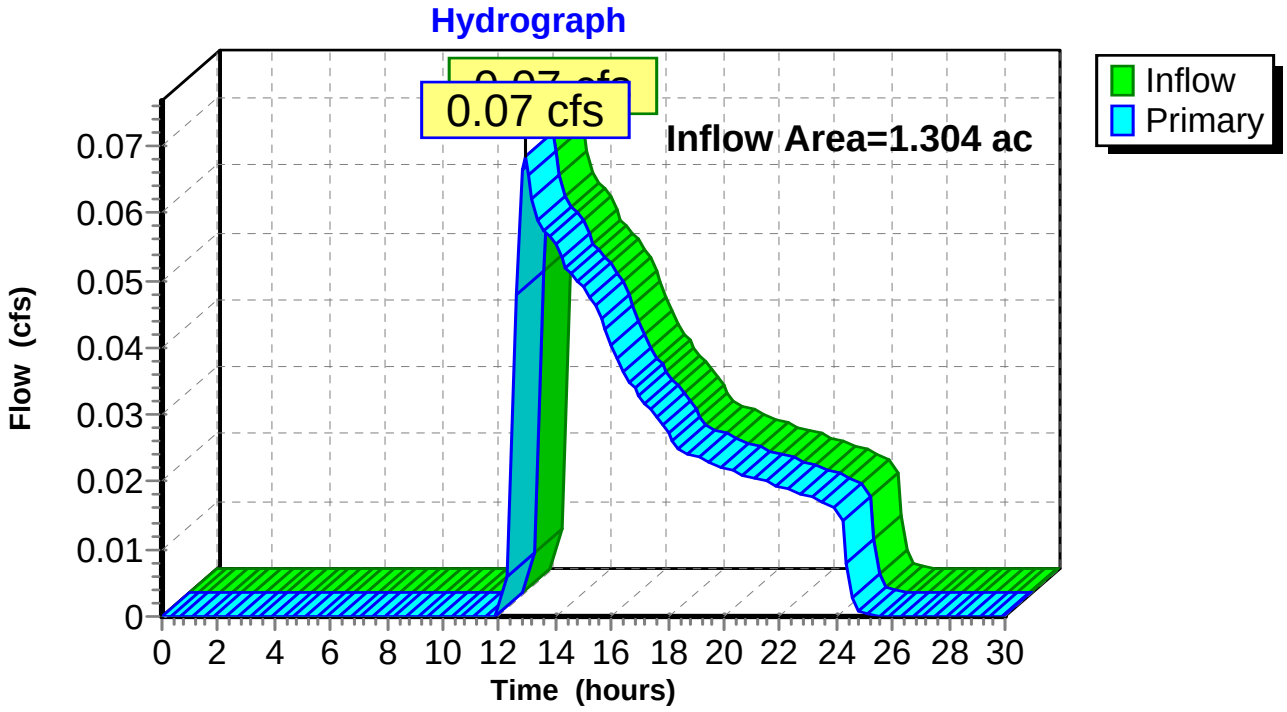


Summary for Link AP-5: AP-5

Inflow Area = 1.304 ac, 0.00% Impervious, Inflow Depth = 0.29" for 50-Year event
Inflow = 0.07 cfs @ 12.89 hrs, Volume= 0.032 af
Primary = 0.07 cfs @ 12.89 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-5: AP-5

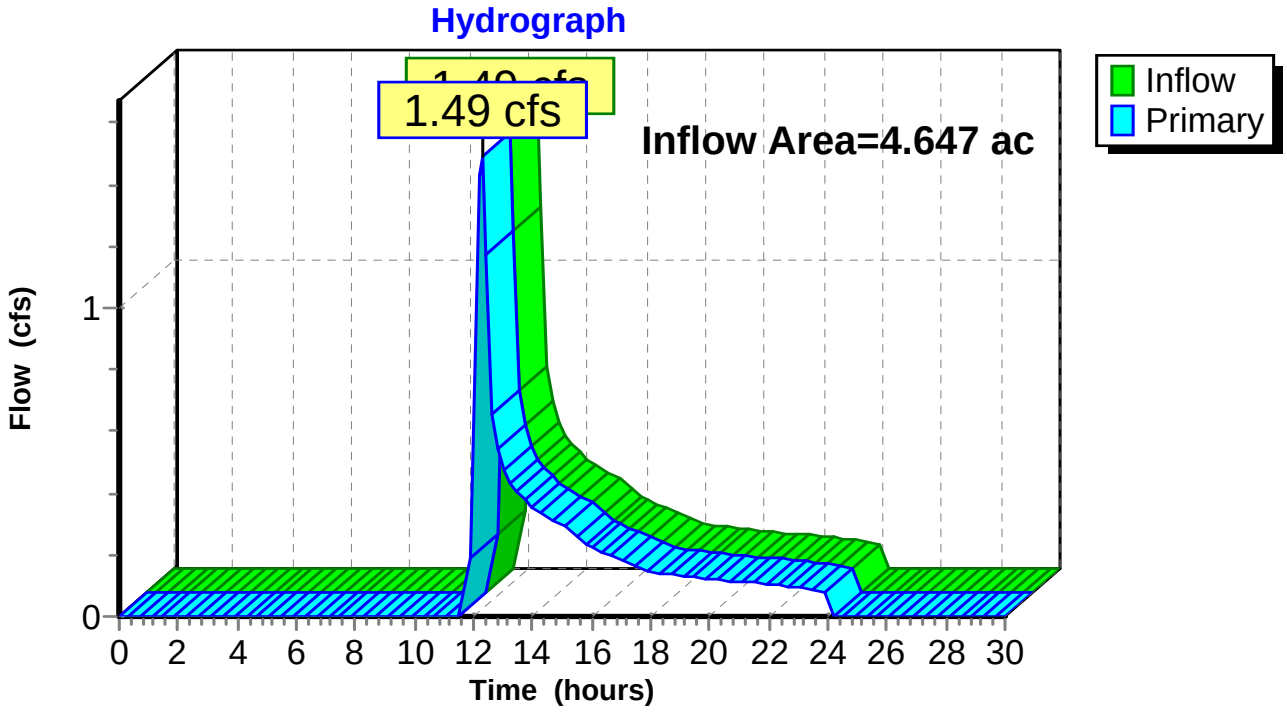


Summary for Link AP-6: AP-6

Inflow Area = 4.647 ac, 6.28% Impervious, Inflow Depth = 0.62" for 50-Year event
Inflow = 1.49 cfs @ 12.26 hrs, Volume= 0.241 af
Primary = 1.49 cfs @ 12.26 hrs, Volume= 0.241 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-6: AP-6



Summary for Subcatchment EDA-1: EDA-1

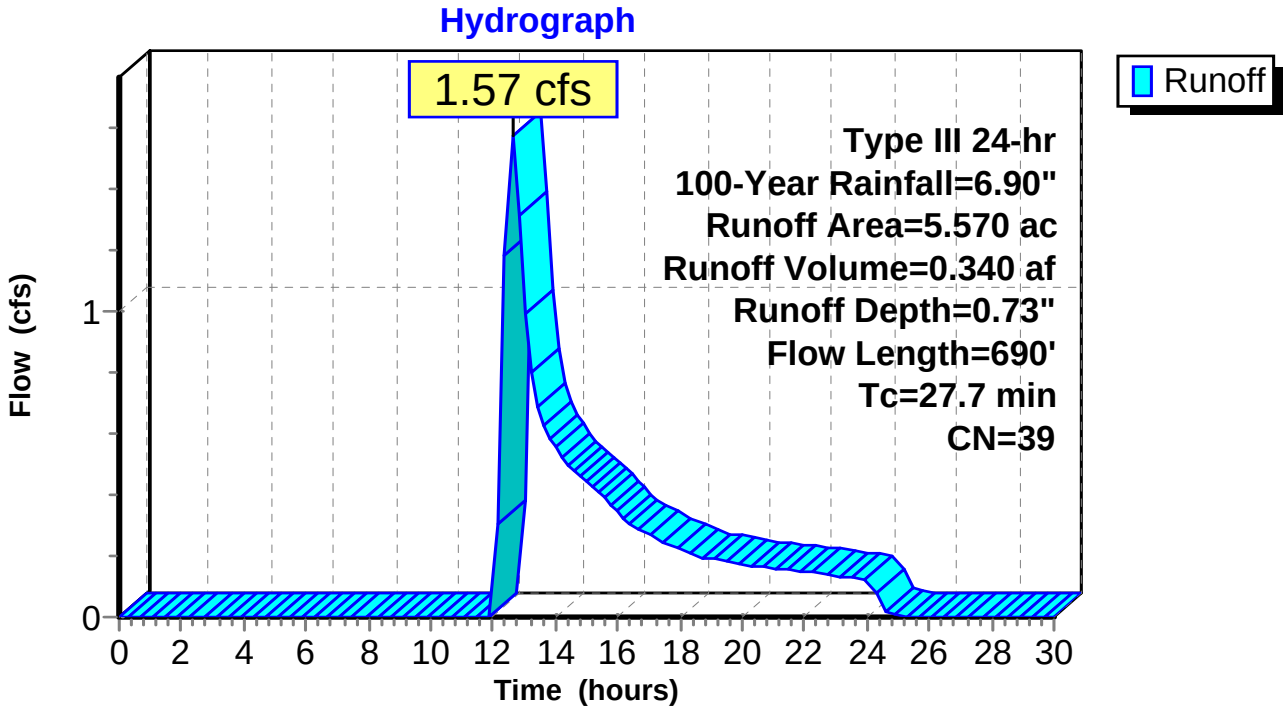
Runoff = 1.57 cfs @ 12.62 hrs, Volume= 0.340 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 100-Year Rainfall=6.90"

Area (ac)	CN	Description
5.570	39	Pasture/grassland/range, Good, HSG A
5.570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	150	0.0200	0.13		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
8.0	540	0.0260	1.13		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
27.7	690	Total			

Subcatchment EDA-1: EDA-1



Summary for Subcatchment EDA-2: EDA-2

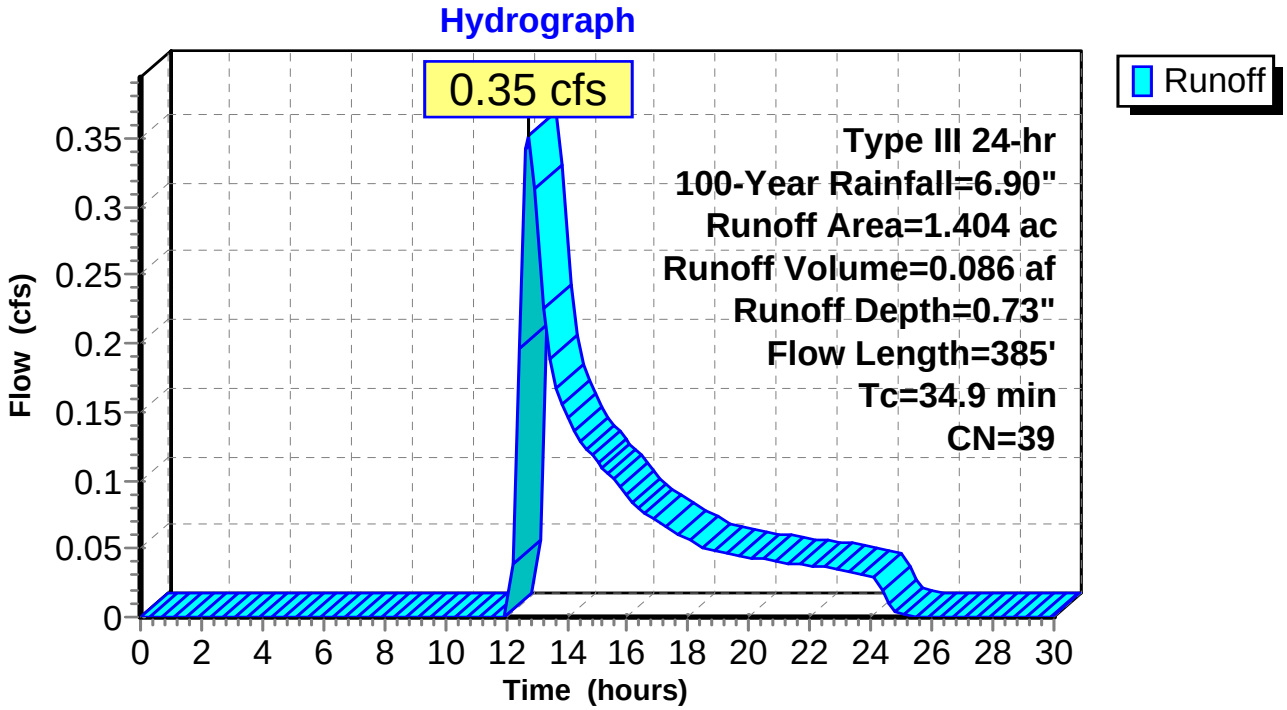
Runoff = 0.35 cfs @ 12.71 hrs, Volume= 0.086 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 100-Year Rainfall=6.90"

Area (ac)	CN	Description
1.404	39	Pasture/grassland/range, Good, HSG A
1.404		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.8	150	0.0066	0.08		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
4.1	235	0.0190	0.96		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
34.9	385	Total			

Subcatchment EDA-2: EDA-2



Summary for Subcatchment EDA-3: EDA-3

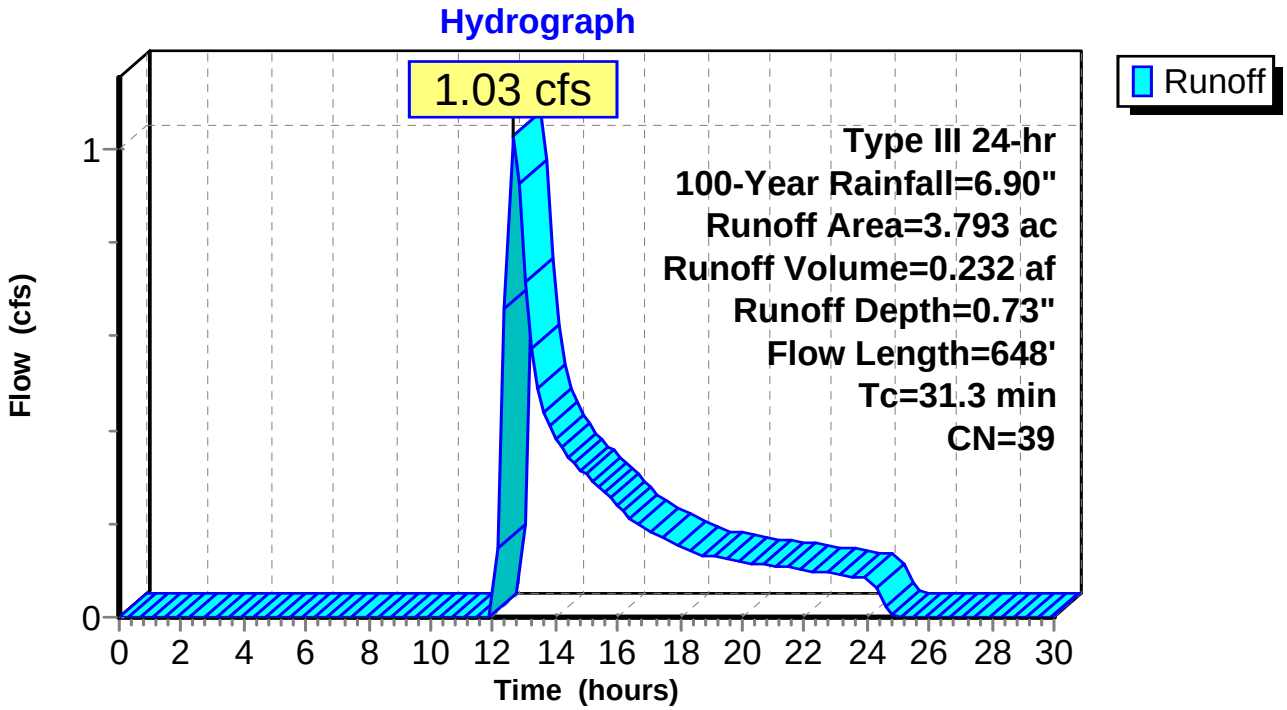
Runoff = 1.03 cfs @ 12.66 hrs, Volume= 0.232 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 100-Year Rainfall=6.90"

Area (ac)	CN	Description
3.793	39	Pasture/grassland/range, Good, HSG A
3.793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	100	0.1550	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
10.8	50	0.0100	0.08		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.20"
14.2	498	0.0070	0.59		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
31.3	648	Total			

Subcatchment EDA-3: EDA-3



Summary for Subcatchment EDA-4: EDA-4

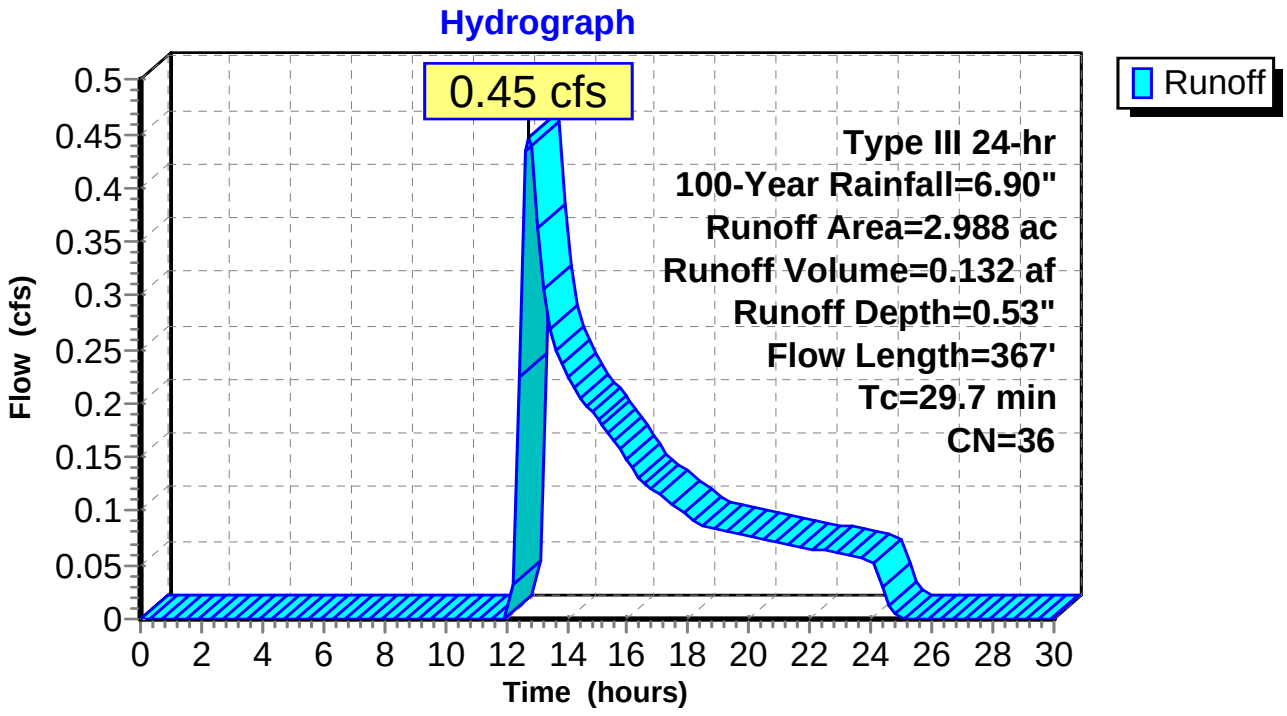
Runoff = 0.45 cfs @ 12.71 hrs, Volume= 0.132 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 100-Year Rainfall=6.90"

Area (ac)	CN	Description
2.080	39	Pasture/grassland/range, Good, HSG A
0.908	30	Woods, Good, HSG A
2.988	36	Weighted Average
2.988		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0100	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
3.5	187	0.0160	0.89		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.2	30	0.1660	2.04		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
29.7	367	Total			

Subcatchment EDA-4: EDA-4



Summary for Subcatchment EDA-5: EDA-5

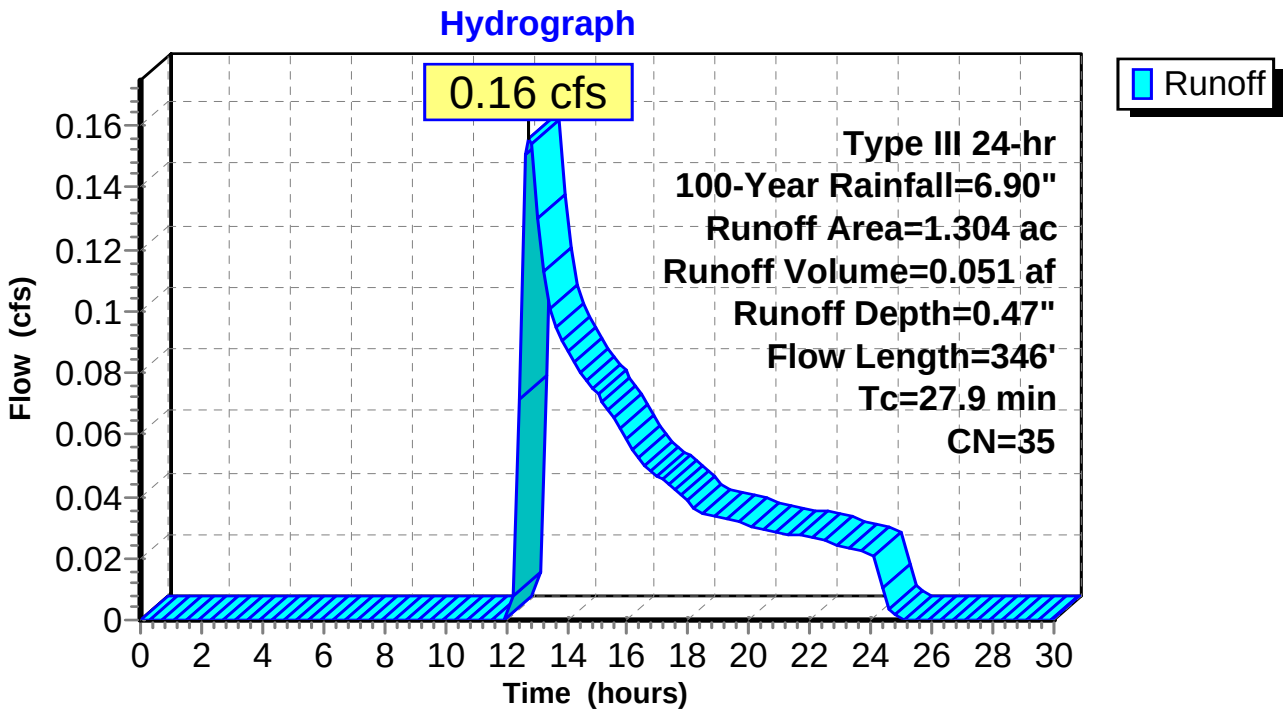
Runoff = 0.16 cfs @ 12.73 hrs, Volume= 0.051 af, Depth= 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 100-Year Rainfall=6.90"

	Area (ac)	CN	Description
	0.749	39	Pasture/grassland/range, Good, HSG A
*	0.340	30	Woods, Good, HSG A
	0.215	30	Woods, Good, HSG A
	1.304	35	Weighted Average
	1.304		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0100	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
1.3	140	0.0640	1.77		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.6	56	0.0890	1.49		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
27.9	346	Total			

Subcatchment EDA-5: EDA-5



Summary for Subcatchment EDA-6: EDA-6

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.39 cfs @ 12.23 hrs, Volume= 0.340 af, Depth= 0.88"

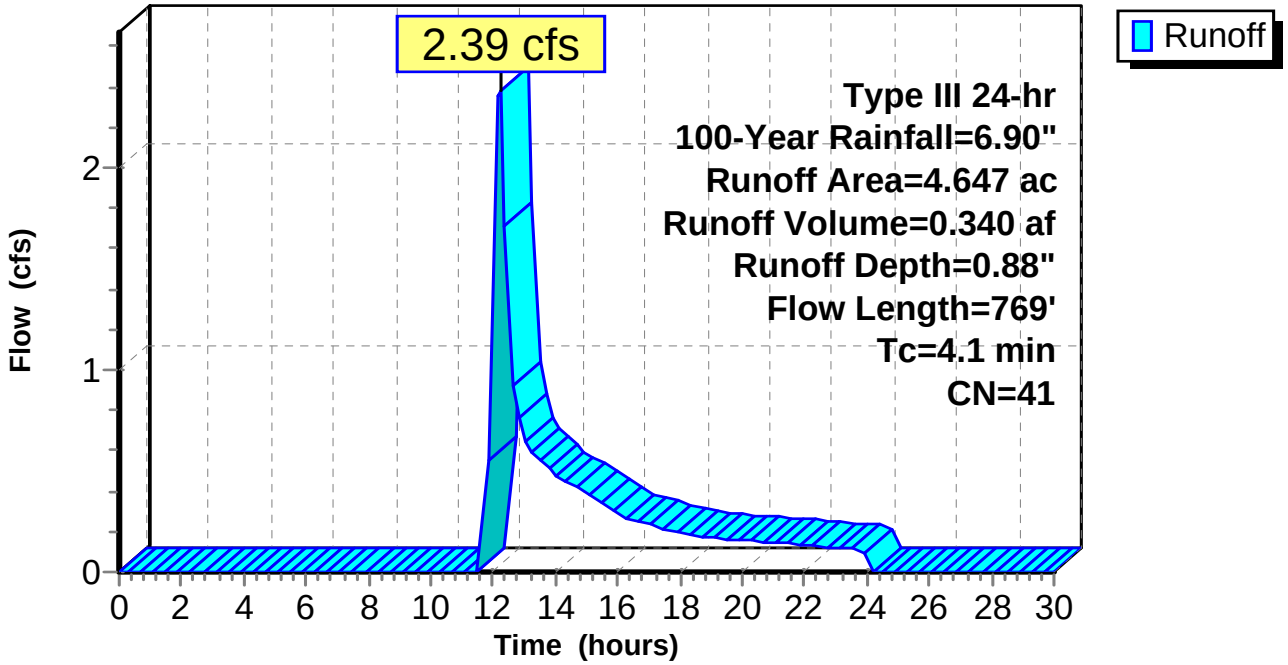
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 100-Year Rainfall=6.90"

Area (ac)	CN	Description
0.292	98	Paved parking, HSG B
0.189	96	Gravel surface, HSG A
1.887	30	Woods, Good, HSG A
2.279	39	Pasture/grassland/range, Good, HSG A
4.647	41	Weighted Average
4.355		93.72% Pervious Area
0.292		6.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	150	0.0200	1.49		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.20"
0.7	149	0.0333	3.70		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.7	223	0.1430	5.67		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
1.0	247	0.0800	4.24		**Shallow Concentrated Flow, D-E** Grassed Waterway Kv= 15.0 fps
4.1	769	Total			

Subcatchment EDA-6: EDA-6

Hydrograph

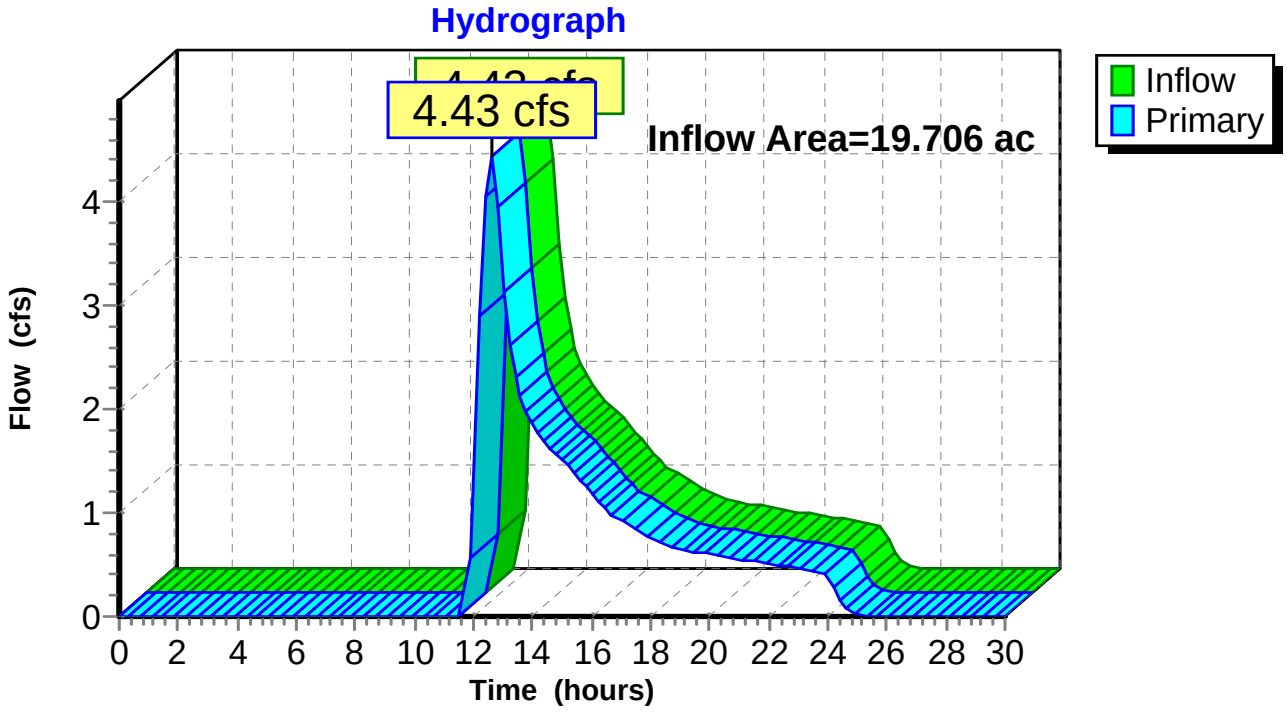


Summary for Link 1L: Quinnatisset Brook

Inflow Area = 19.706 ac, 1.48% Impervious, Inflow Depth = 0.72" for 100-Year event
Inflow = 4.43 cfs @ 12.59 hrs, Volume= 1.180 af
Primary = 4.43 cfs @ 12.59 hrs, Volume= 1.180 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link 1L: Quinnatisset Brook

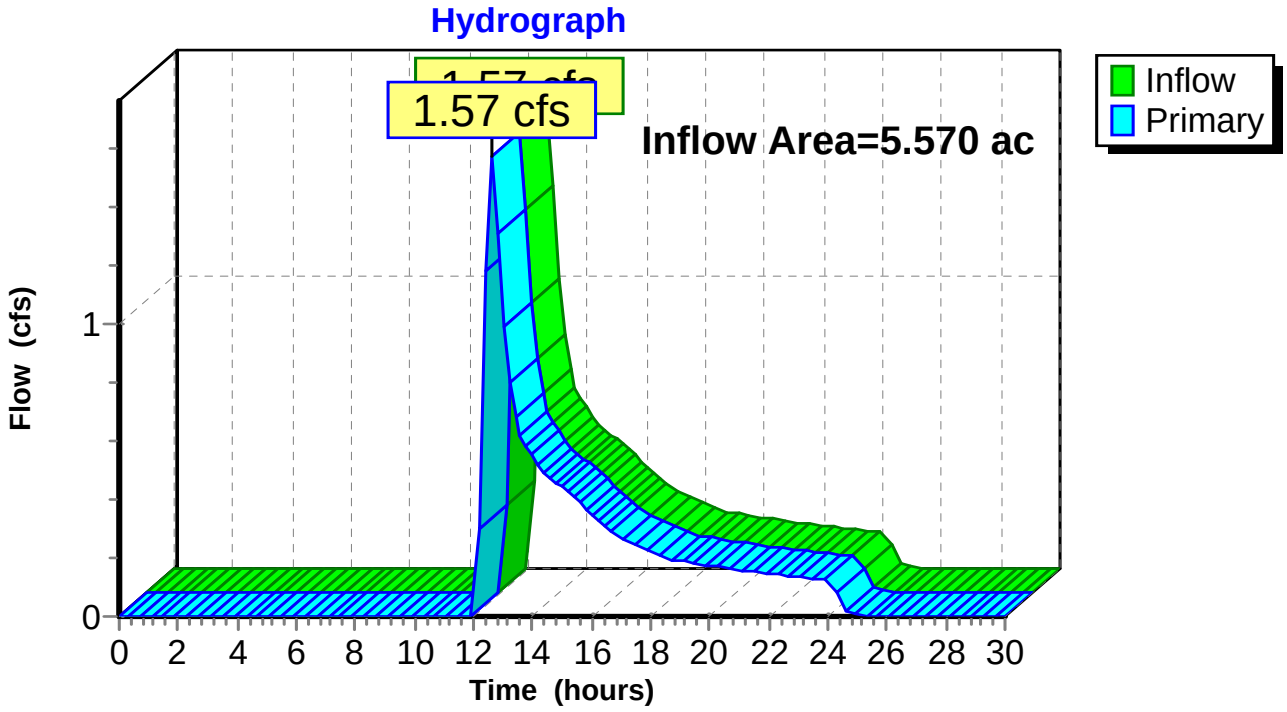


Summary for Link AP-1: AP-1

Inflow Area = 5.570 ac, 0.00% Impervious, Inflow Depth = 0.73" for 100-Year event
Inflow = 1.57 cfs @ 12.62 hrs, Volume= 0.340 af
Primary = 1.57 cfs @ 12.62 hrs, Volume= 0.340 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-1: AP-1

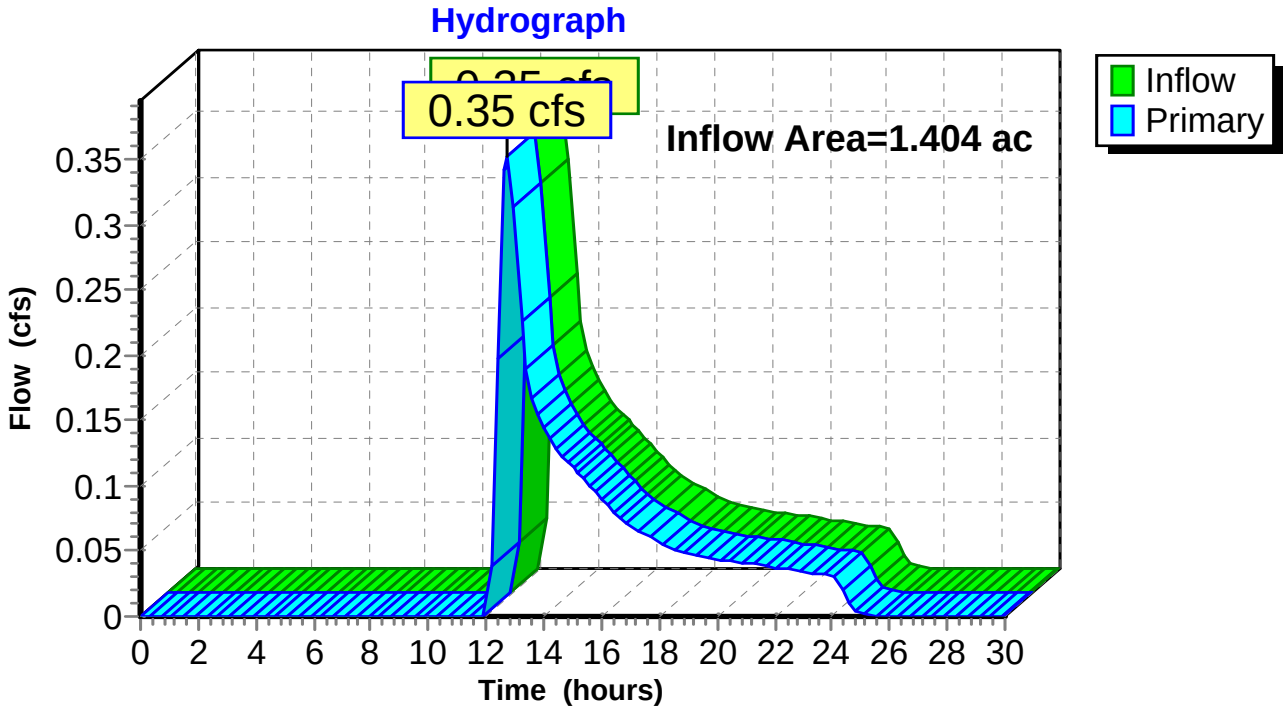


Summary for Link AP-2: AP-2

Inflow Area = 1.404 ac, 0.00% Impervious, Inflow Depth = 0.73" for 100-Year event
Inflow = 0.35 cfs @ 12.71 hrs, Volume= 0.086 af
Primary = 0.35 cfs @ 12.71 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-2: AP-2

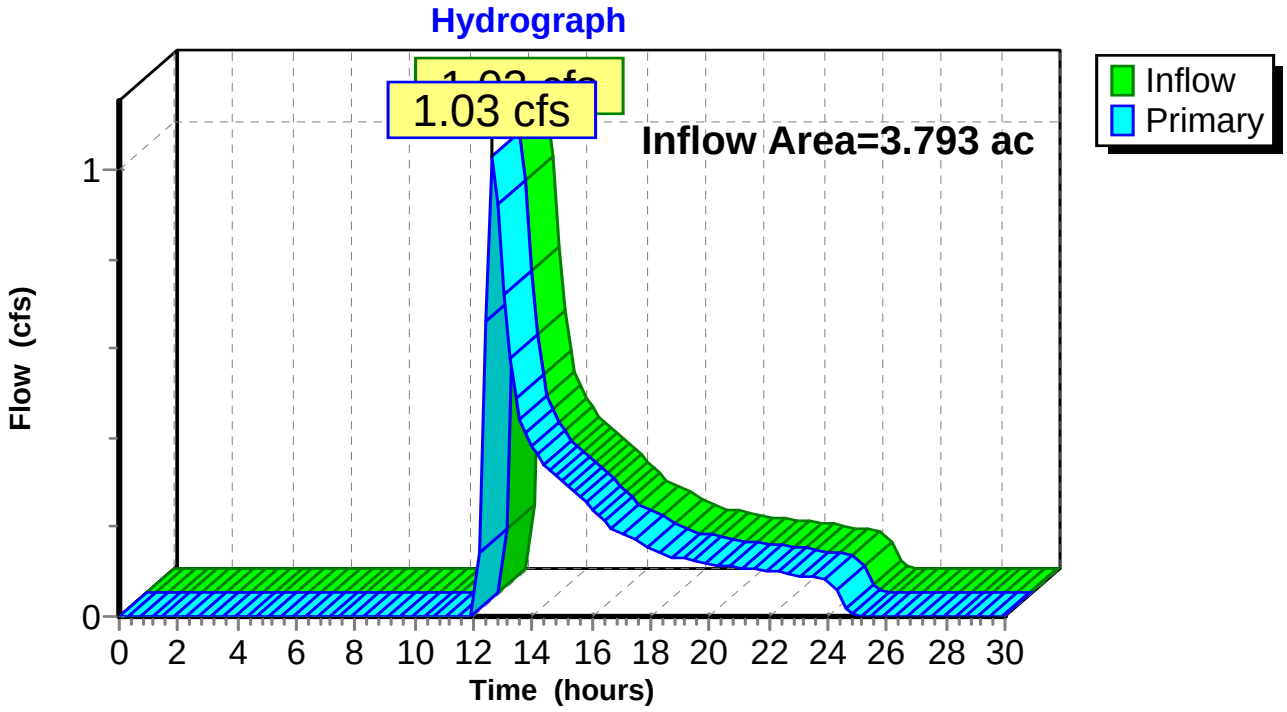


Summary for Link AP-3: AP-3

Inflow Area = 3.793 ac, 0.00% Impervious, Inflow Depth = 0.73" for 100-Year event
Inflow = 1.03 cfs @ 12.66 hrs, Volume= 0.232 af
Primary = 1.03 cfs @ 12.66 hrs, Volume= 0.232 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-3: AP-3

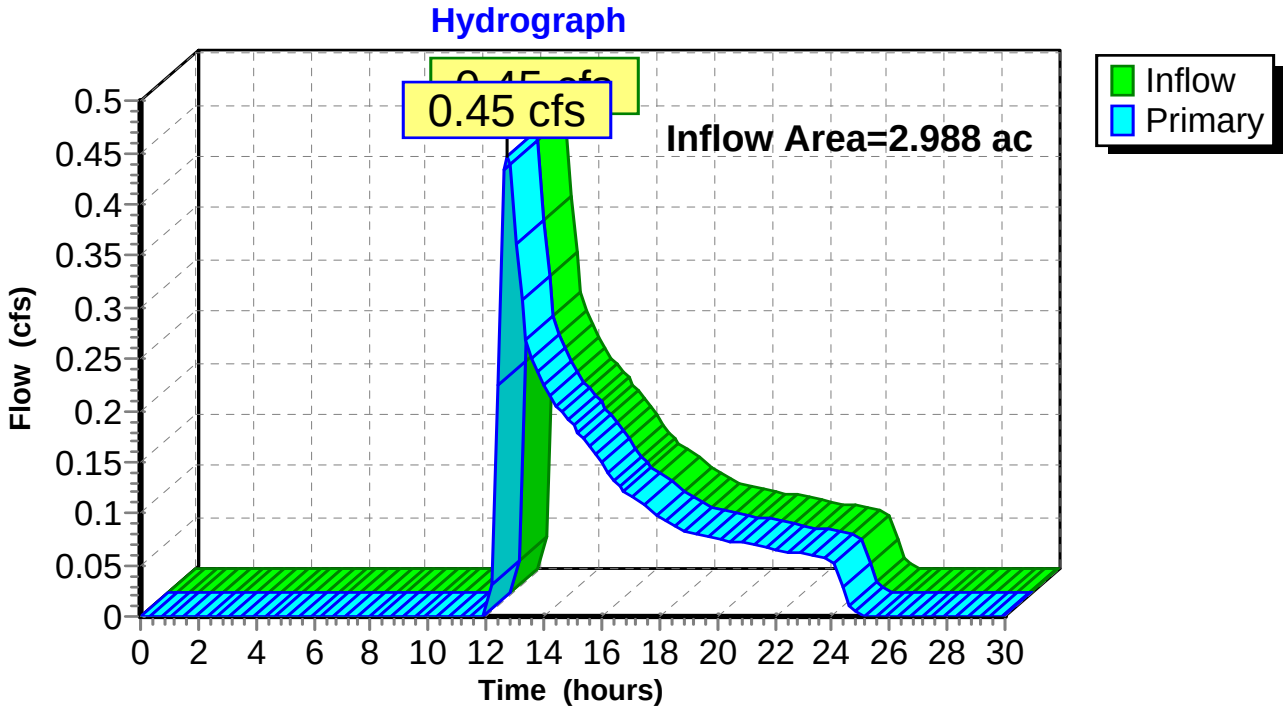


Summary for Link AP-4: AP-4

Inflow Area = 2.988 ac, 0.00% Impervious, Inflow Depth = 0.53" for 100-Year event
Inflow = 0.45 cfs @ 12.71 hrs, Volume= 0.132 af
Primary = 0.45 cfs @ 12.71 hrs, Volume= 0.132 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-4: AP-4

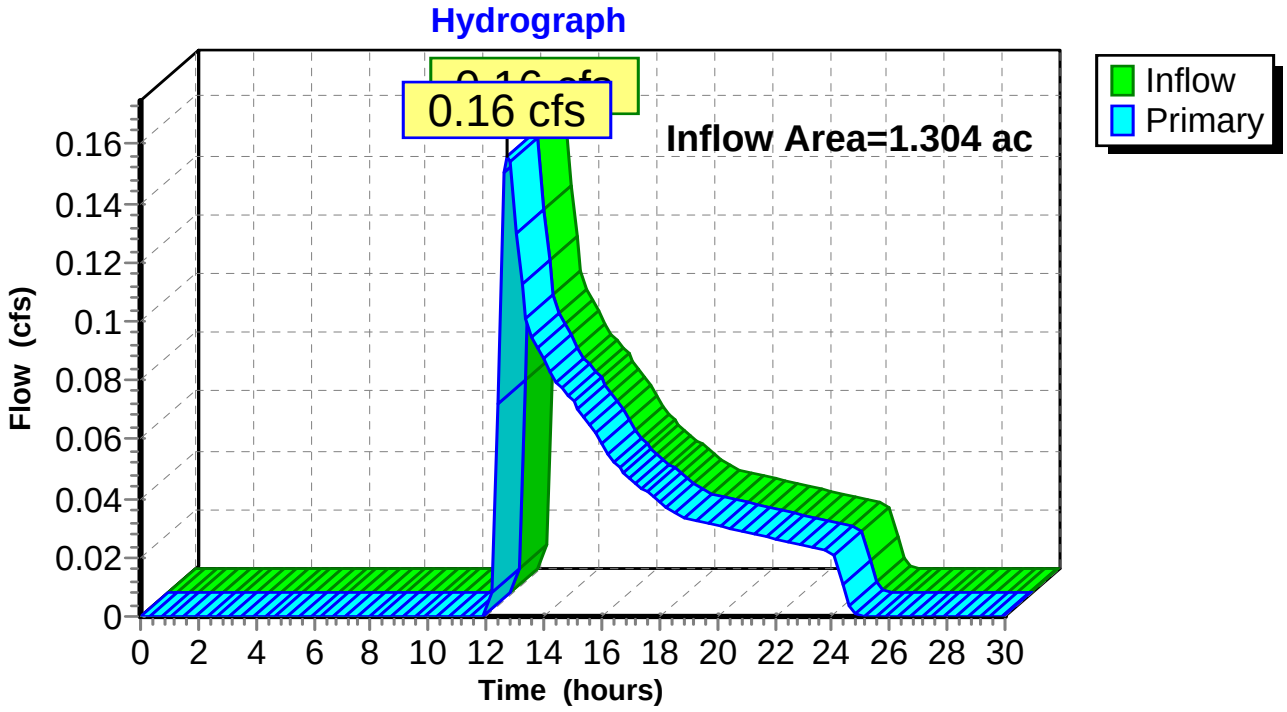


Summary for Link AP-5: AP-5

Inflow Area = 1.304 ac, 0.00% Impervious, Inflow Depth = 0.47" for 100-Year event
Inflow = 0.16 cfs @ 12.73 hrs, Volume= 0.051 af
Primary = 0.16 cfs @ 12.73 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-5: AP-5

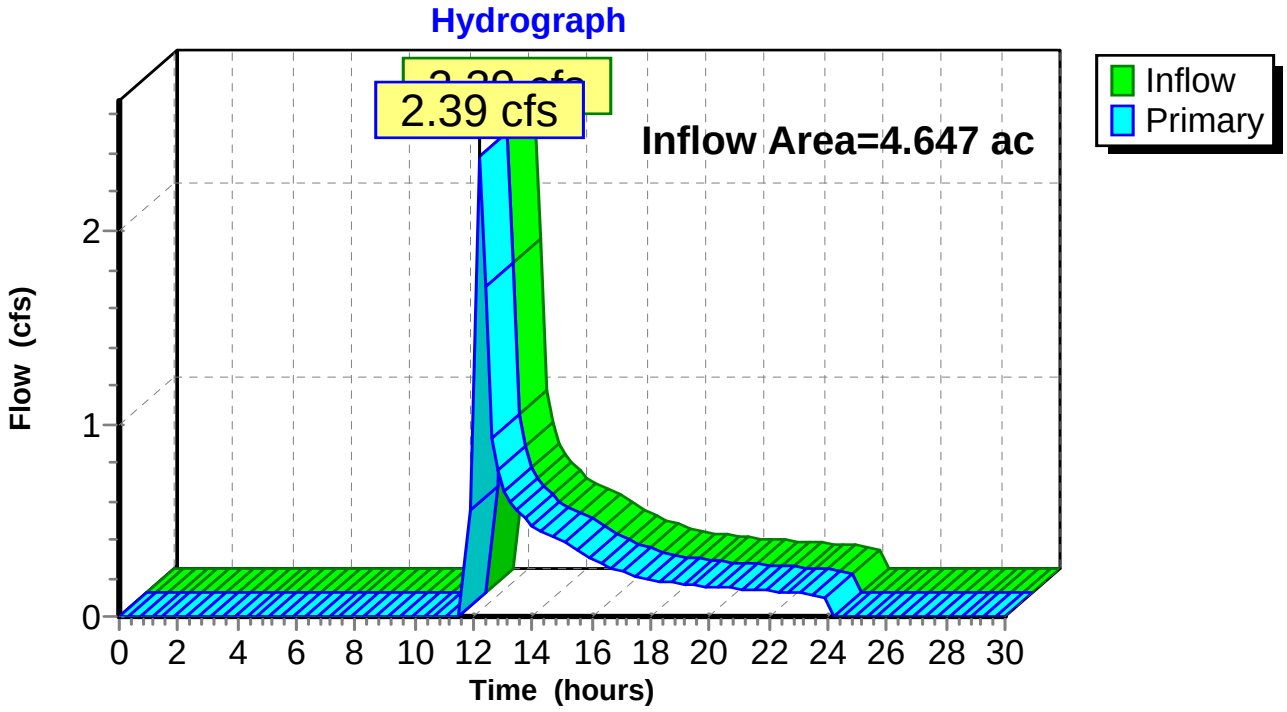


Summary for Link AP-6: AP-6

Inflow Area = 4.647 ac, 6.28% Impervious, Inflow Depth = 0.88" for 100-Year event
Inflow = 2.39 cfs @ 12.23 hrs, Volume= 0.340 af
Primary = 2.39 cfs @ 12.23 hrs, Volume= 0.340 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-6: AP-6

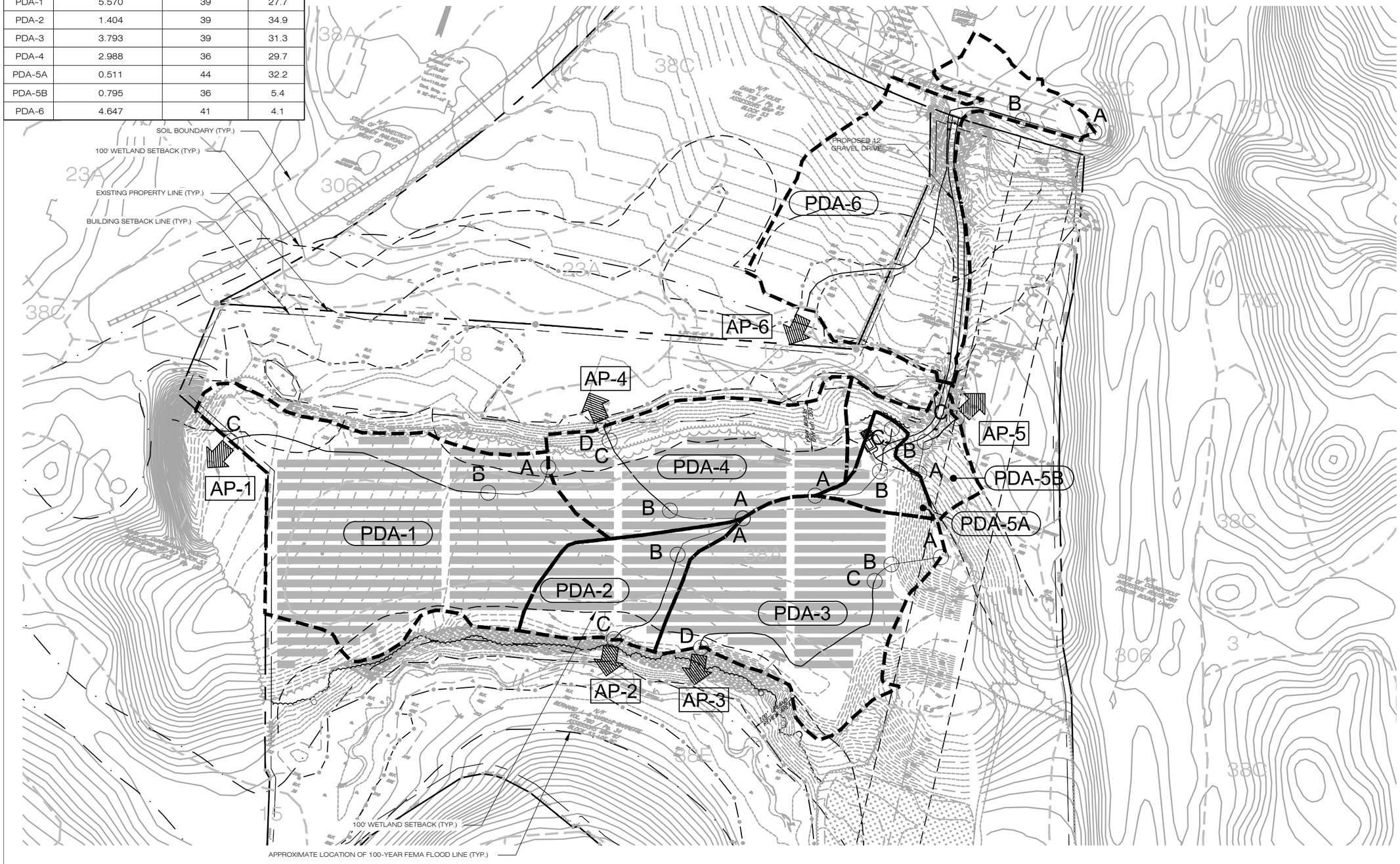


APPENDIX E

Proposed Drainage Area Map (PDA-1) &
Hydrologic Computations (HydroCAD)

PROPOSED DRAINAGE AREAS

	TOTAL AREA (ACRES)	COMPOSITE CN	TC (MINS.)
PDA-1	5.570	39	27.7
PDA-2	1.404	39	34.9
PDA-3	3.793	39	31.3
PDA-4	2.988	36	29.7
PDA-5A	0.511	44	32.2
PDA-5B	0.795	36	5.4
PDA-6	4.647	41	4.1



FOR PERMITTING ONLY

(IN FEET) 1 inch = 100 ft.

C-TECSOLAR

1 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860)-580-7174

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

APPROVALS

LANDLORD: _____ DATE: _____

CLIENT: _____ DATE: _____

NO	DATE	REVISION
0	07/01/16	FOR REVIEW: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONALS OF RECORD

PROF: SCOTT M. CHASSE P.E.
COMP: ALL POINTS TECHNOLGY CORPORATION, P.C.
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

NOTE:

C-TECSOLAR "BARRETTE FARMS"

SITE ADDRESS: 1 BALLARD ROAD THOMPSON, CT

APT FILING NUMBER: CT481111

DRAWN BY: BJP

CHECKED BY: SMC

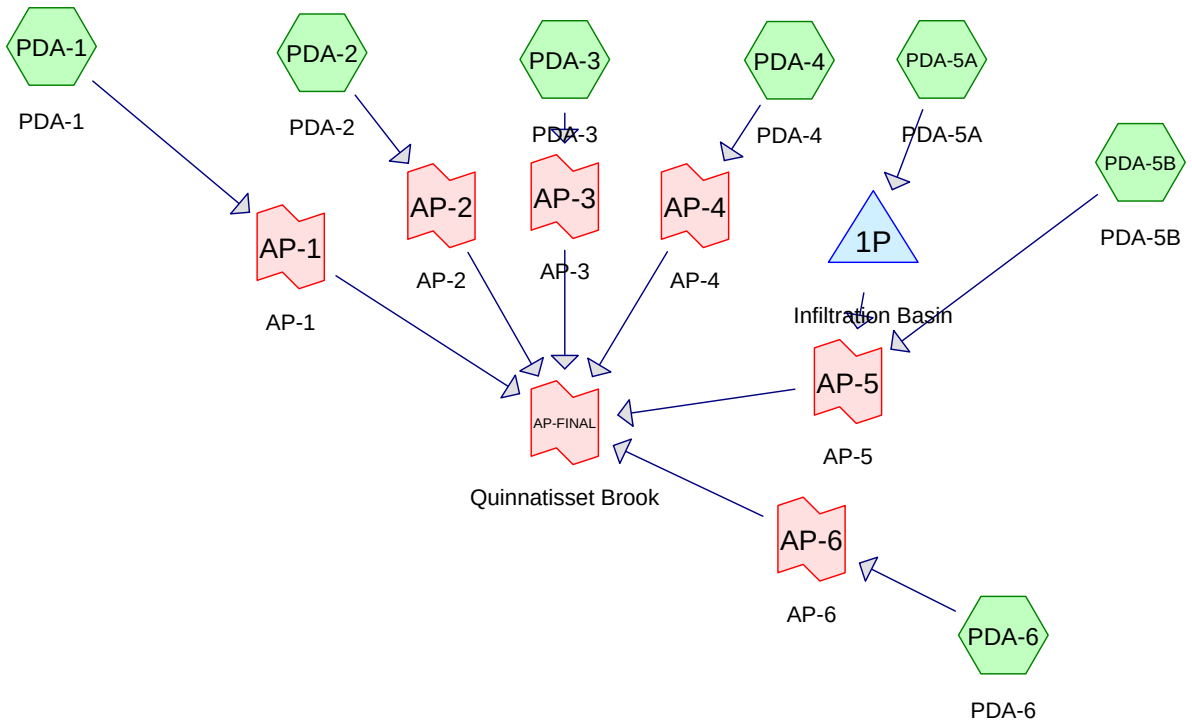
DATE: 07/01/16

SHEET TITLE:

PROPOSED DRAINAGE AREA MAP

SHEET NUMBER:

PDA-1



Subcat Reach Pond Link

Routing Diagram for Thompson C-Tec Solar - Proposed Rev0 06-xx-16
Prepared by Microsoft, Printed 6/28/2016

Summary for Subcatchment PDA-1: PDA-1

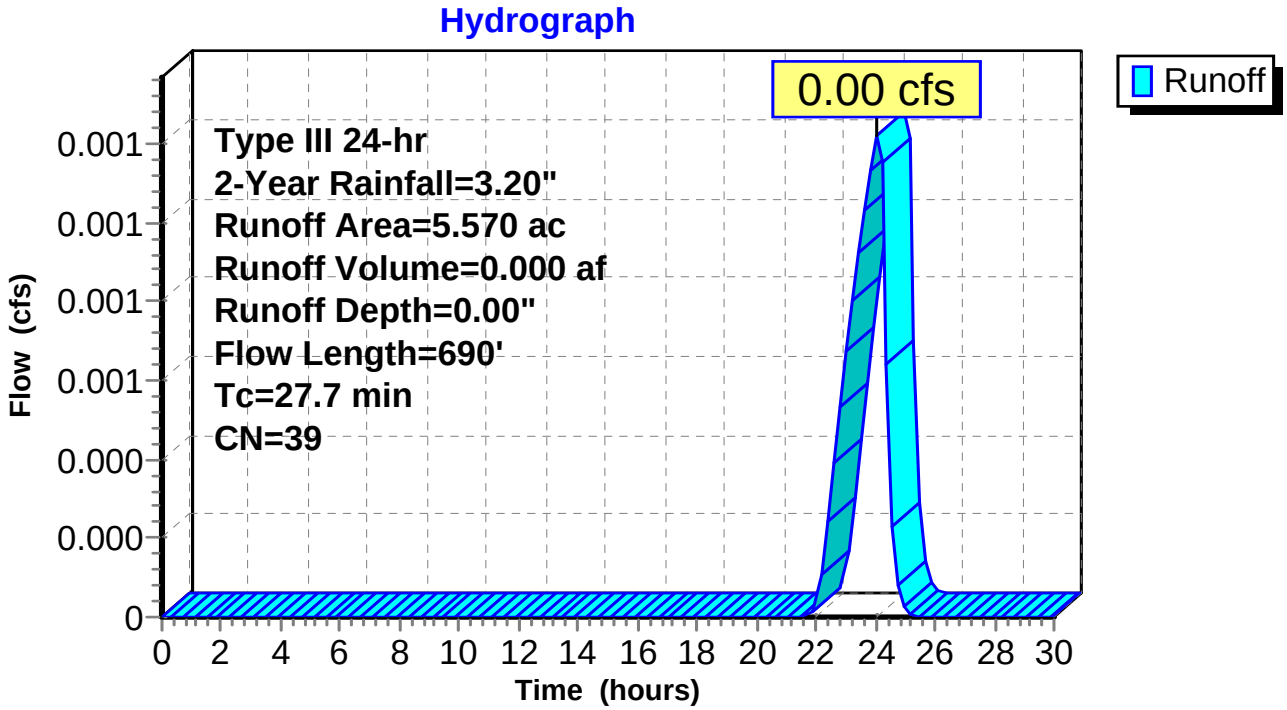
Runoff = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
5.570	39	Pasture/grassland/range, Good, HSG A
5.570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	150	0.0200	0.13		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
8.0	540	0.0260	1.13		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
27.7	690	Total			

Subcatchment PDA-1: PDA-1



Summary for Subcatchment PDA-2: PDA-2

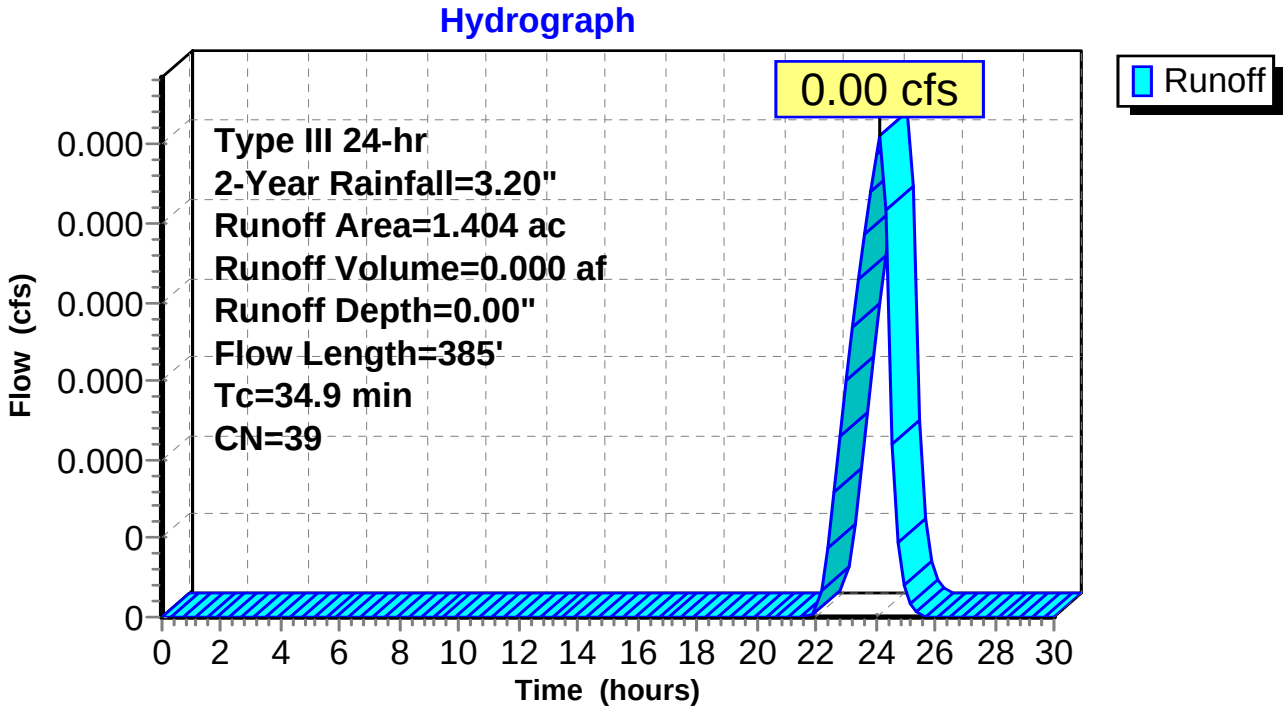
Runoff = 0.00 cfs @ 24.11 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
1.404	39	Pasture/grassland/range, Good, HSG A
1.404		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.8	150	0.0066	0.08		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
4.1	235	0.0190	0.96		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
34.9	385	Total			

Subcatchment PDA-2: PDA-2



Summary for Subcatchment PDA-3: PDA-3

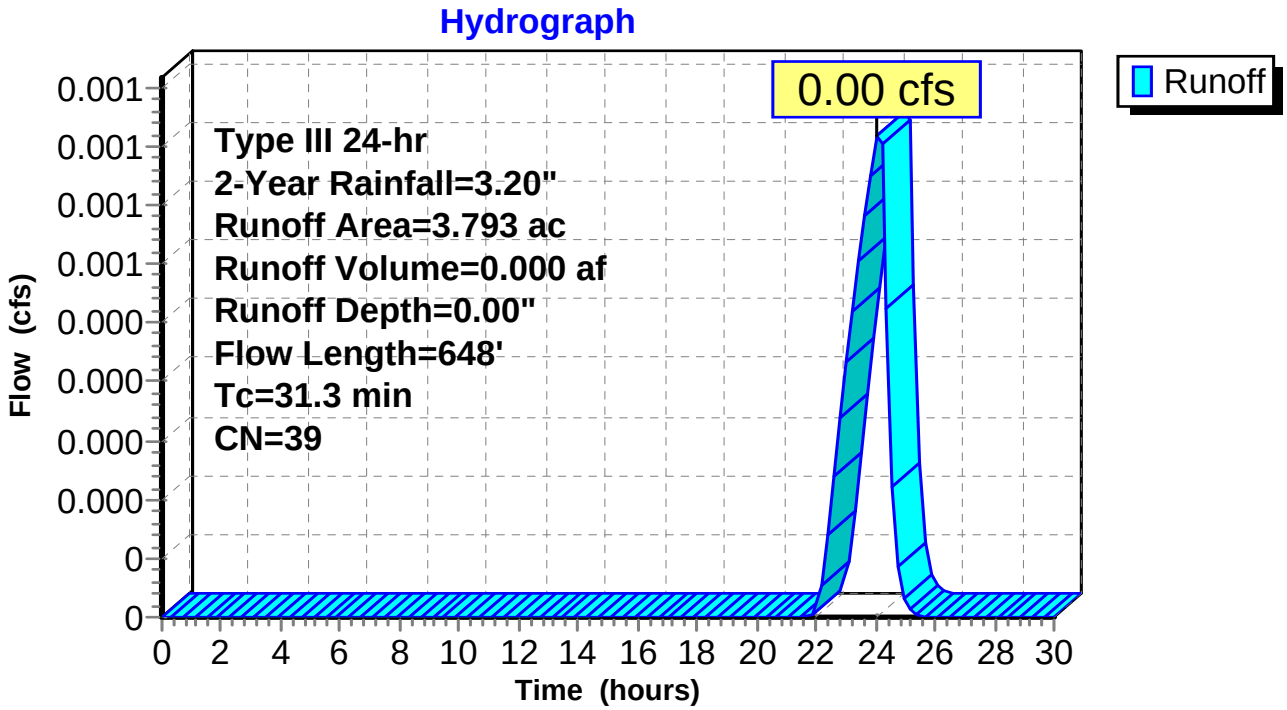
Runoff = 0.00 cfs @ 24.07 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
3.793	39	Pasture/grassland/range, Good, HSG A
3.793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	100	0.1550	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
10.8	50	0.0100	0.08		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.20"
14.2	498	0.0070	0.59		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
31.3	648	Total			

Subcatchment PDA-3: PDA-3



Summary for Subcatchment PDA-4: PDA-4

[45] Hint: Runoff=Zero

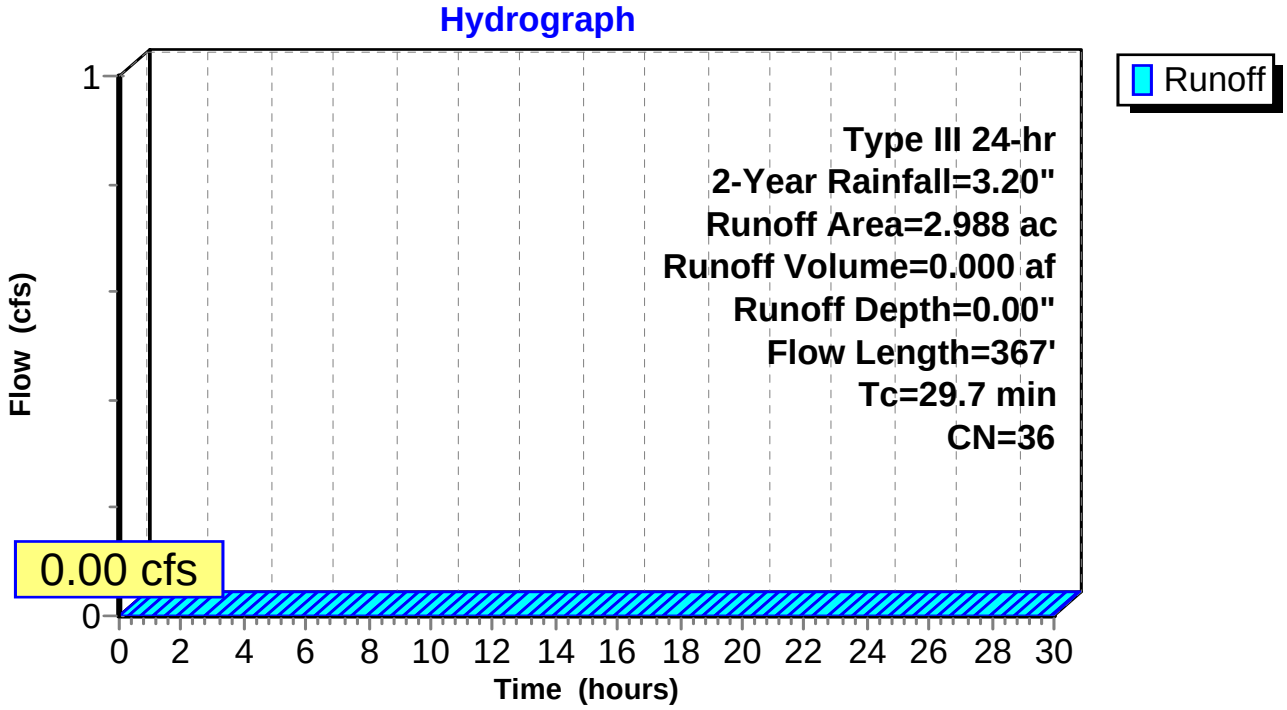
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
2.080	39	Pasture/grassland/range, Good, HSG A
0.908	30	Woods, Good, HSG A
2.988	36	Weighted Average
2.988		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0100	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
3.5	187	0.0160	0.89		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.2	30	0.1660	2.04		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
29.7	367	Total			

Subcatchment PDA-4: PDA-4



Summary for Subcatchment PDA-5A: PDA-5A

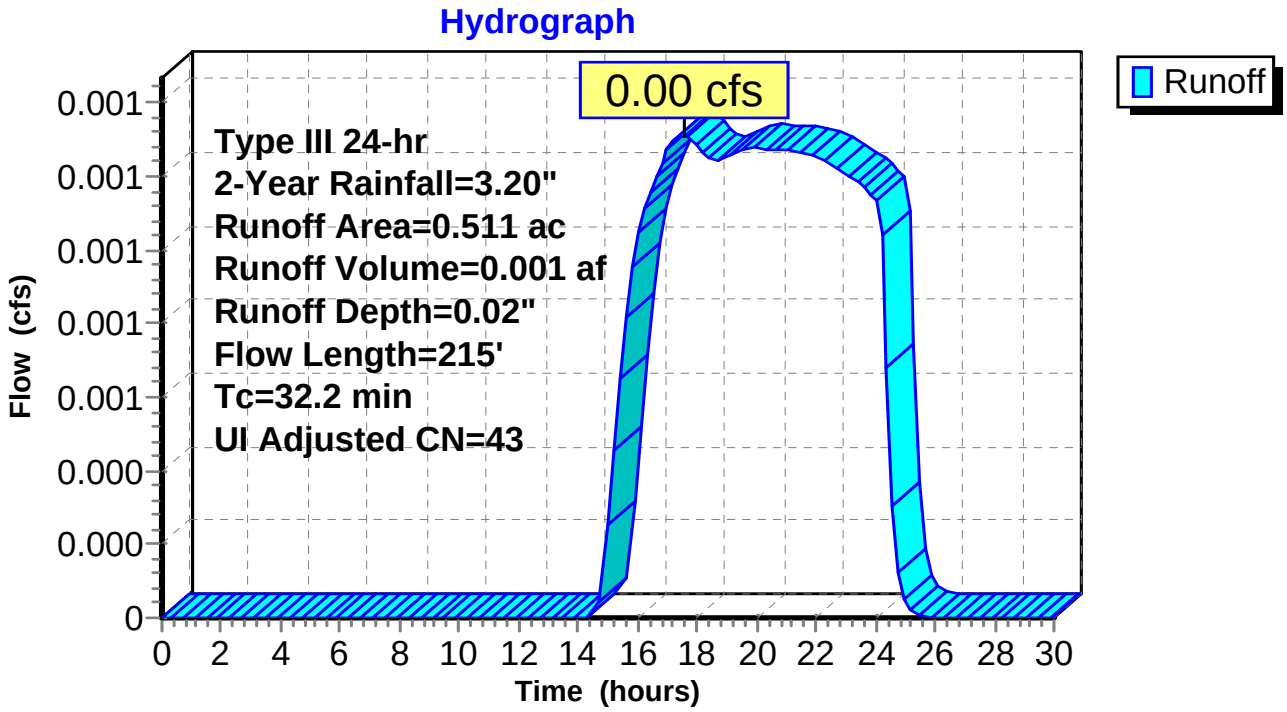
Runoff = 0.00 cfs @ 17.58 hrs, Volume= 0.001 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Adj	Description
0.026	96		Gravel surface, HSG A
0.469	39		Pasture/grassland/range, Good, HSG A
0.007	98		Unconnected pavement, HSG A
0.009	98		Unconnected pavement, HSG A
0.511	44	43	Weighted Average, UI Adjusted
0.495			96.87% Pervious Area
0.016			3.13% Impervious Area
0.016			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.9	150	0.0060	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.3	65	0.0615	3.72		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.2	215	Total			

Subcatchment PDA-5A: PDA-5A



Summary for Subcatchment PDA-5B: PDA-5B

[49] Hint: Tc<2dt may require smaller dt
[45] Hint: Runoff=Zero

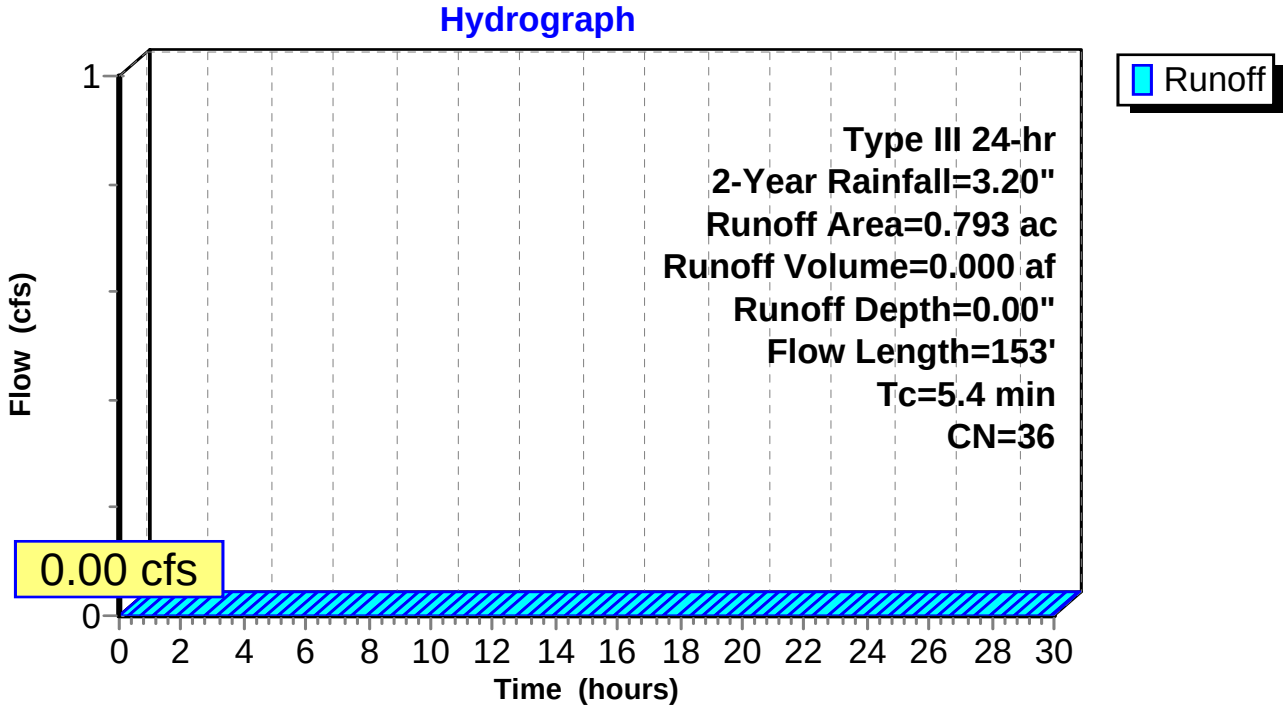
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
0.211	39	Pasture/grassland/range, Good, HSG A
0.340	30	Woods, Good, HSG A
0.197	30	Woods, Good, HSG A
0.045	96	Gravel surface, HSG A
0.793	36	Weighted Average
0.793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	72	0.1700	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
0.7	81	0.0860	2.05		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
5.4	153	Total			

Subcatchment PDA-5B: PDA-5B



Summary for Subcatchment PDA-6: PDA-6

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.01 cfs @ 22.67 hrs, Volume= 0.003 af, Depth= 0.01"

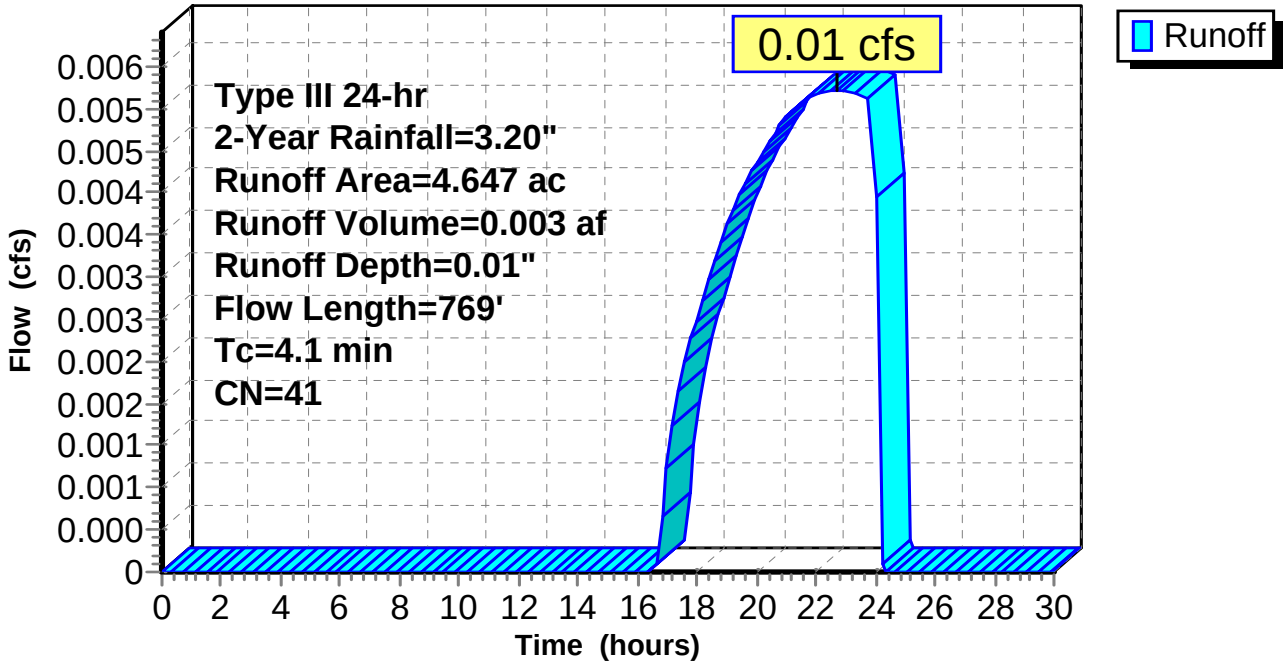
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
0.292	98	Paved parking, HSG B
0.149	96	Gravel surface, HSG A
1.887	30	Woods, Good, HSG A
2.319	39	Pasture/grassland/range, Good, HSG A
4.647	41	Weighted Average
4.355		93.72% Pervious Area
0.292		6.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	150	0.0200	1.49		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.20"
0.7	149	0.0333	3.70		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.7	223	0.1430	5.67		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
1.0	247	0.0800	4.24		**Shallow Concentrated Flow, D-E** Grassed Waterway Kv= 15.0 fps
4.1	769	Total			

Subcatchment PDA-6: PDA-6

Hydrograph



Summary for Pond 1P: Infiltration Basin

Inflow Area = 0.511 ac, 3.13% Impervious, Inflow Depth = 0.02" for 2-Year event
Inflow = 0.00 cfs @ 17.58 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 22.55 hrs, Volume= 0.001 af, Atten= 6%, Lag= 298.2 min
Discarded = 0.00 cfs @ 22.55 hrs, Volume= 0.001 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 323.01' @ 22.55 hrs Surf.Area= 637 sf Storage= 8 cf

Plug-Flow detention time= 107.7 min calculated for 0.001 af (98% of inflow)
Center-of-Mass det. time= 106.2 min (1,300.6 - 1,194.4)

Volume	Invert	Avail.Storage	Storage Description
#1	323.00'	4,674 cf	**Custom Stage Data (Irregular)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
323.00	634	119.0	0	0	634
324.00	859	136.0	744	744	1,002
325.00	1,096	141.0	975	1,719	1,179
326.00	1,459	157.0	1,273	2,992	1,586
327.00	1,735	174.0	1,595	4,587	2,064
327.05	1,735	174.0	87	4,674	2,072

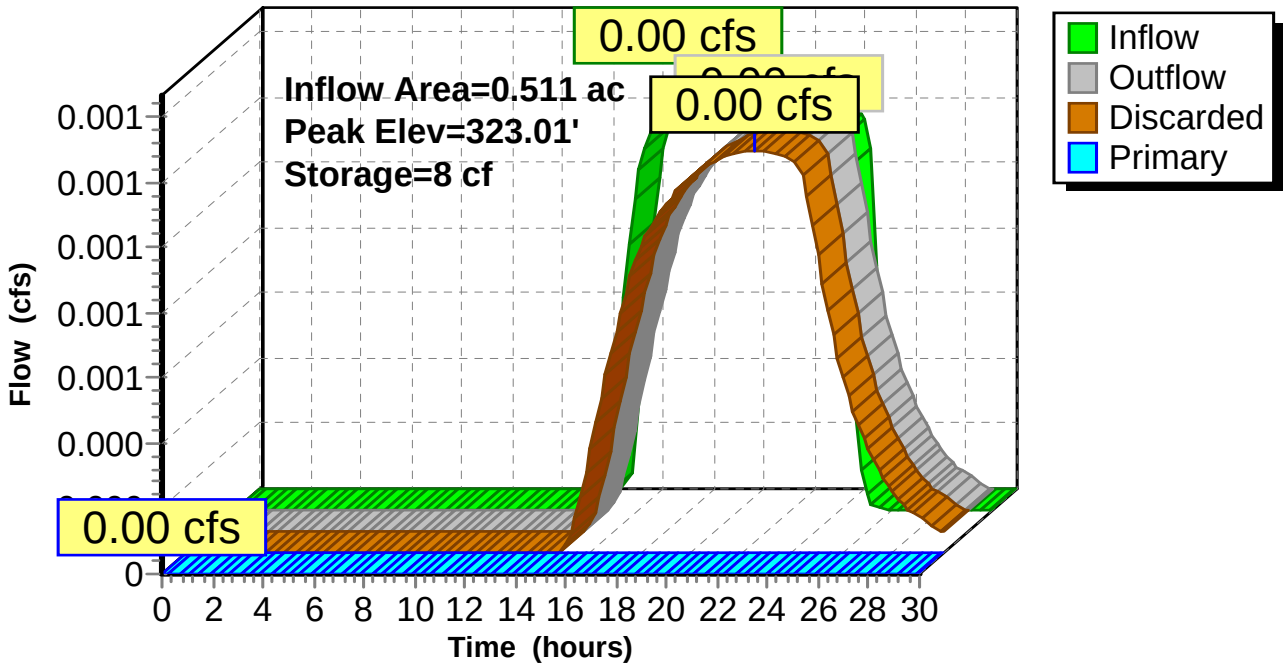
Device	Routing	Invert	Outlet Devices
#1	Primary	327.00'	**70.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	323.00'	**0.300 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 22.55 hrs HW=323.01' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=323.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Infiltration Basin

Hydrograph

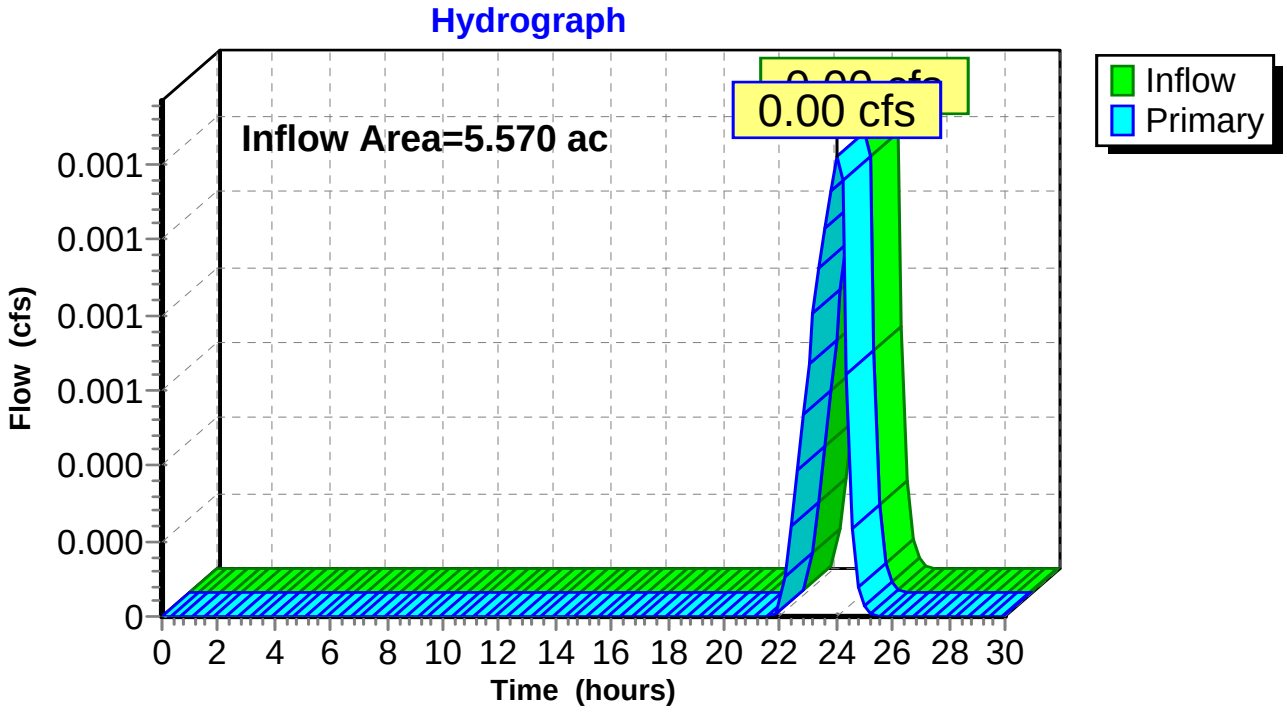


Summary for Link AP-1: AP-1

Inflow Area = 5.570 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-1: AP-1

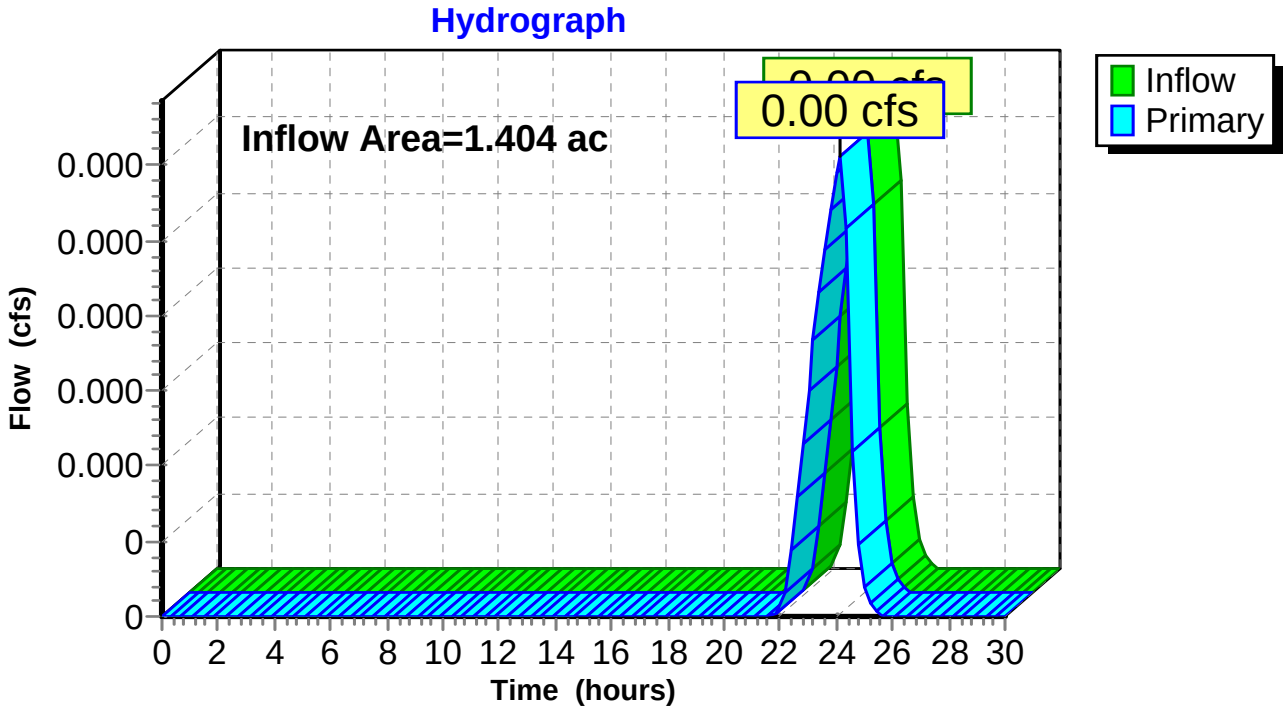


Summary for Link AP-2: AP-2

Inflow Area = 1.404 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 24.11 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 24.11 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-2: AP-2

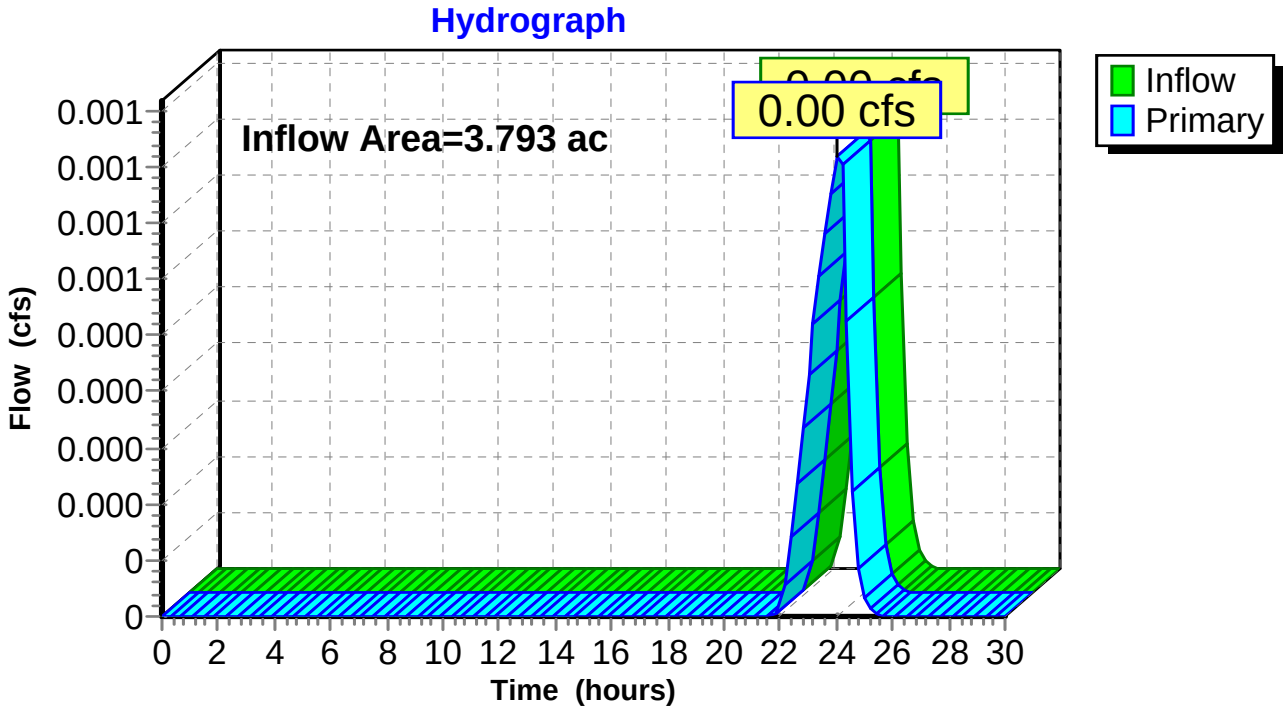


Summary for Link AP-3: AP-3

Inflow Area = 3.793 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 24.07 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 24.07 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-3: AP-3

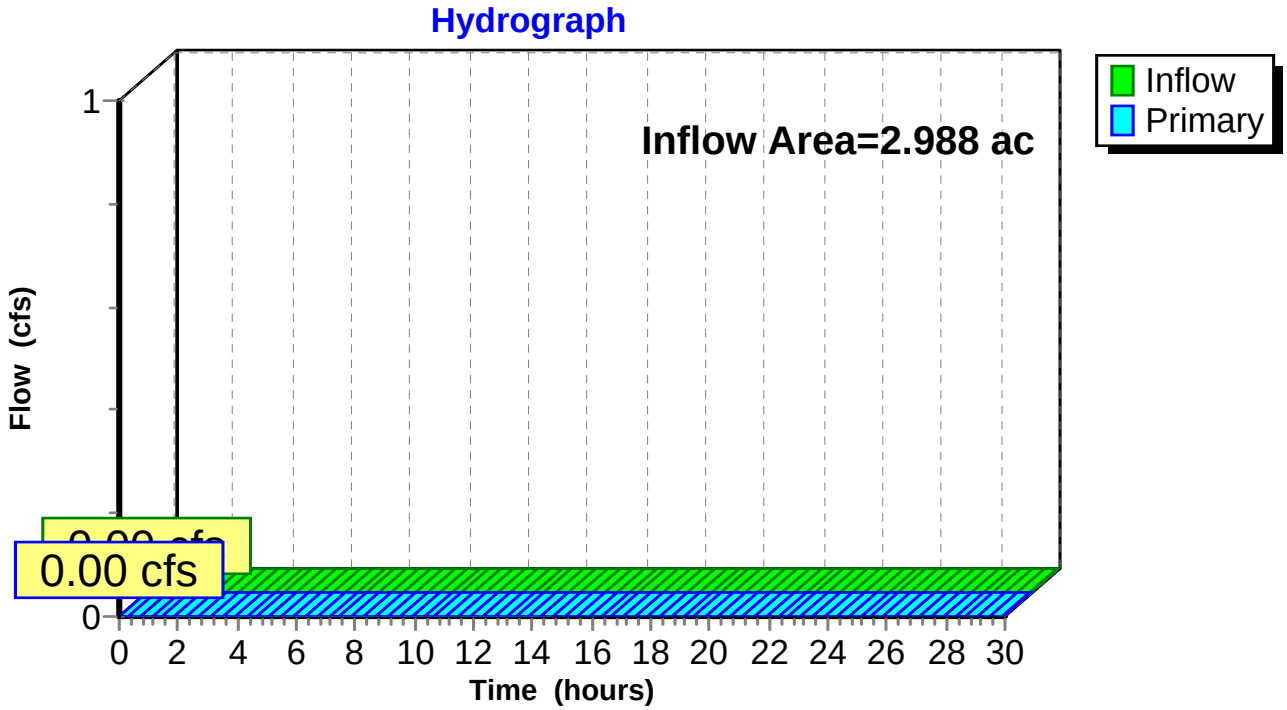


Summary for Link AP-4: AP-4

Inflow Area = 2.988 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-4: AP-4

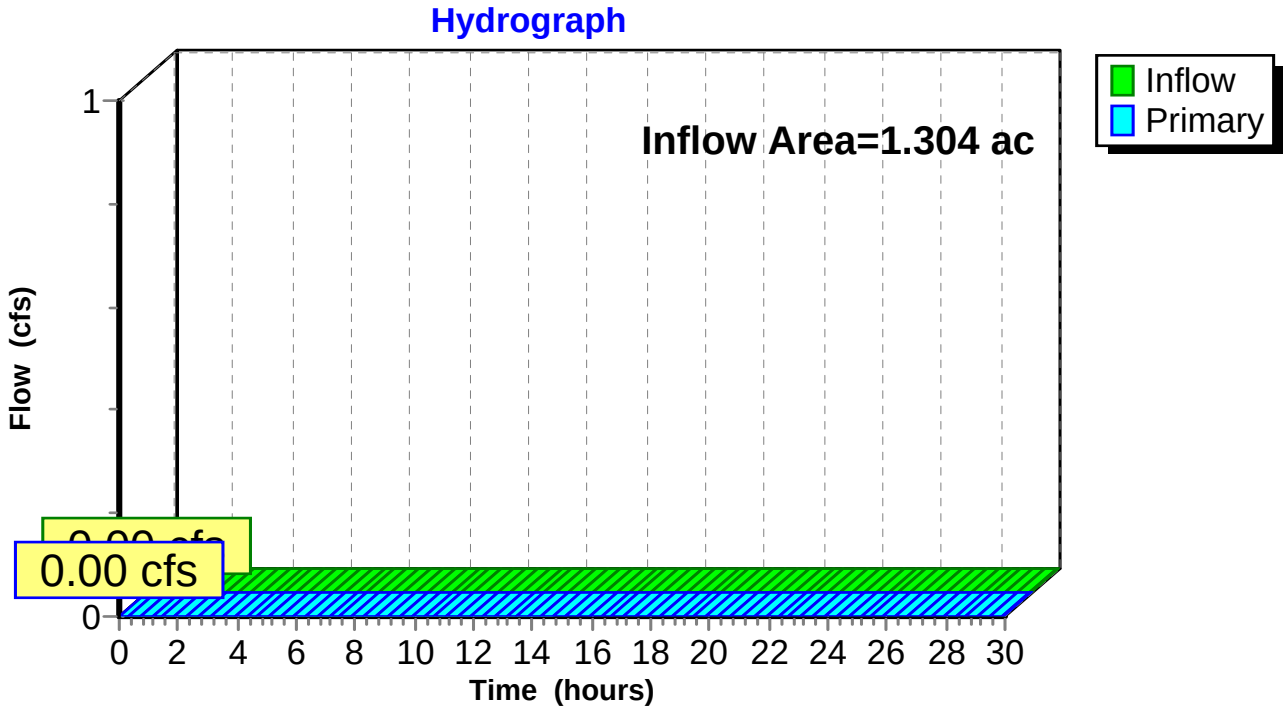


Summary for Link AP-5: AP-5

Inflow Area = 1.304 ac, 1.23% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-5: AP-5

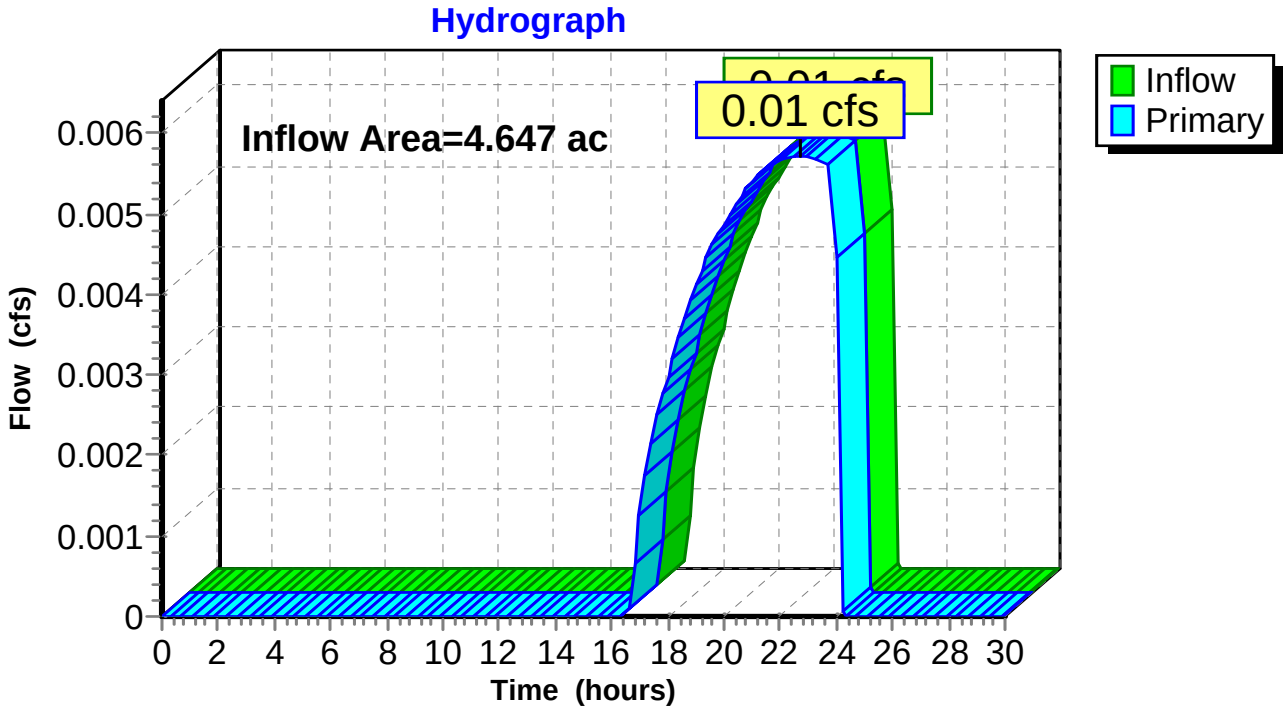


Summary for Link AP-6: AP-6

Inflow Area = 4.647 ac, 6.28% Impervious, Inflow Depth = 0.01" for 2-Year event
Inflow = 0.01 cfs @ 22.67 hrs, Volume= 0.003 af
Primary = 0.01 cfs @ 22.67 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-6: AP-6

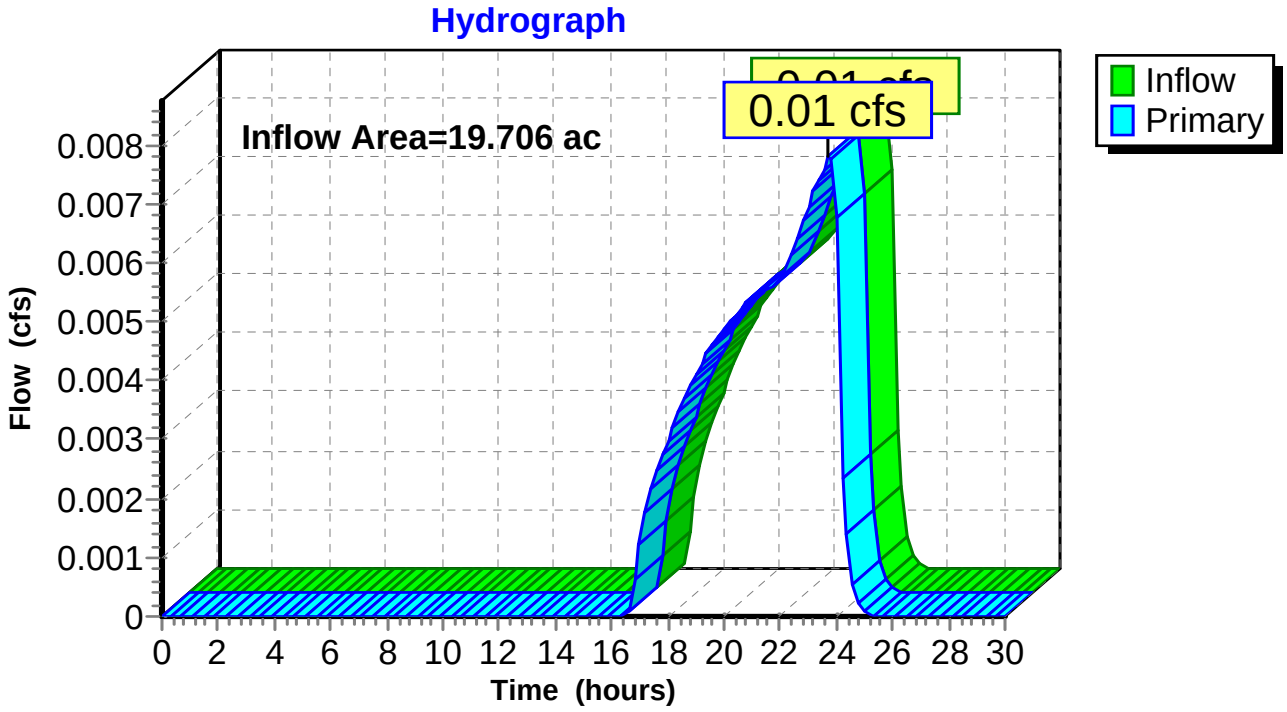


Summary for Link AP-FINAL: Quinnatisset Brook

Inflow Area = 19.706 ac, 1.56% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.01 cfs @ 23.73 hrs, Volume= 0.003 af
Primary = 0.01 cfs @ 23.73 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-FINAL: Quinnatisset Brook



Summary for Subcatchment PDA-1: PDA-1

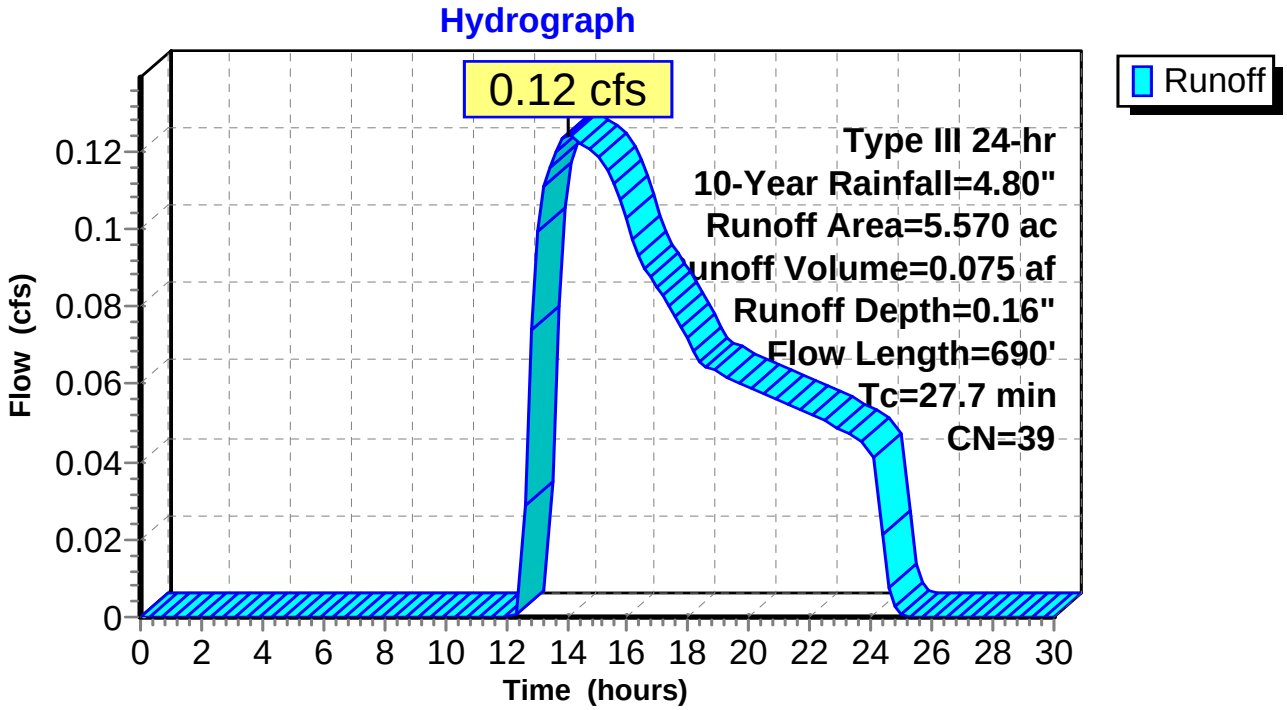
Runoff = 0.12 cfs @ 14.01 hrs, Volume= 0.075 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (ac)	CN	Description
5.570	39	Pasture/grassland/range, Good, HSG A
5.570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	150	0.0200	0.13		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
8.0	540	0.0260	1.13		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
27.7	690	Total			

Subcatchment PDA-1: PDA-1



Summary for Subcatchment PDA-2: PDA-2

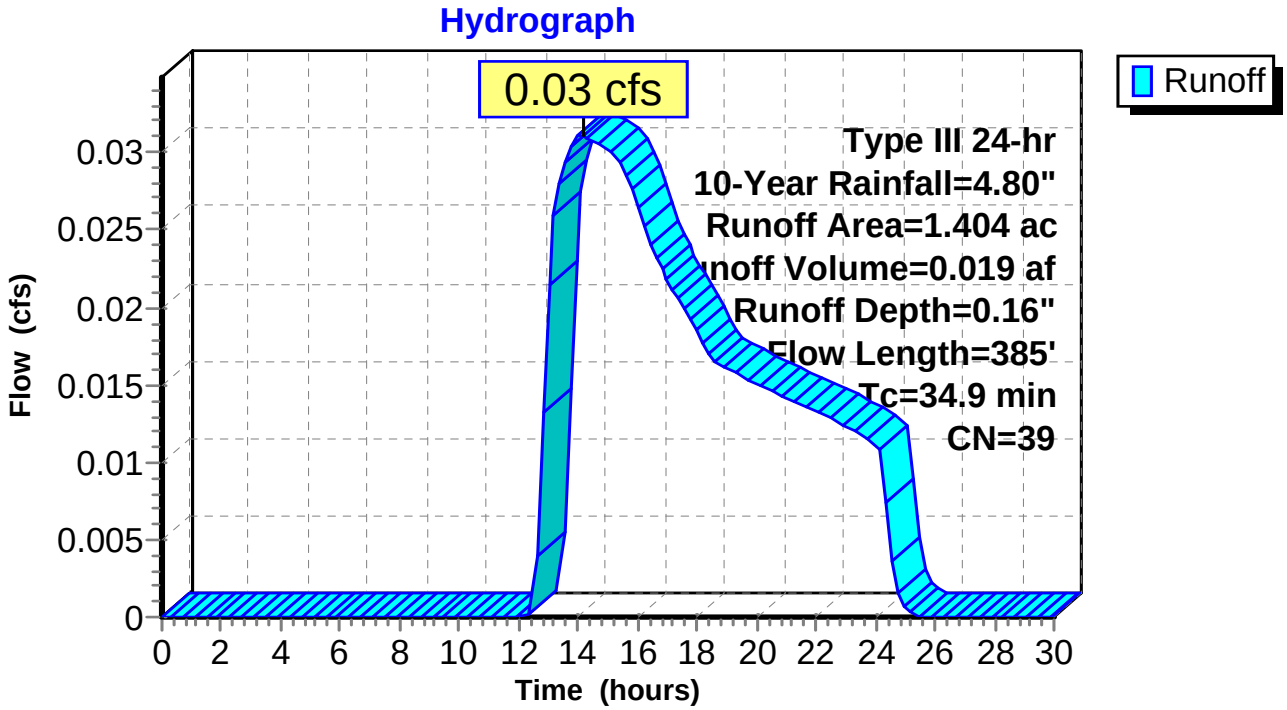
Runoff = 0.03 cfs @ 14.13 hrs, Volume= 0.019 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (ac)	CN	Description
1.404	39	Pasture/grassland/range, Good, HSG A
1.404		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.8	150	0.0066	0.08		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
4.1	235	0.0190	0.96		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
34.9	385	Total			

Subcatchment PDA-2: PDA-2



Summary for Subcatchment PDA-3: PDA-3

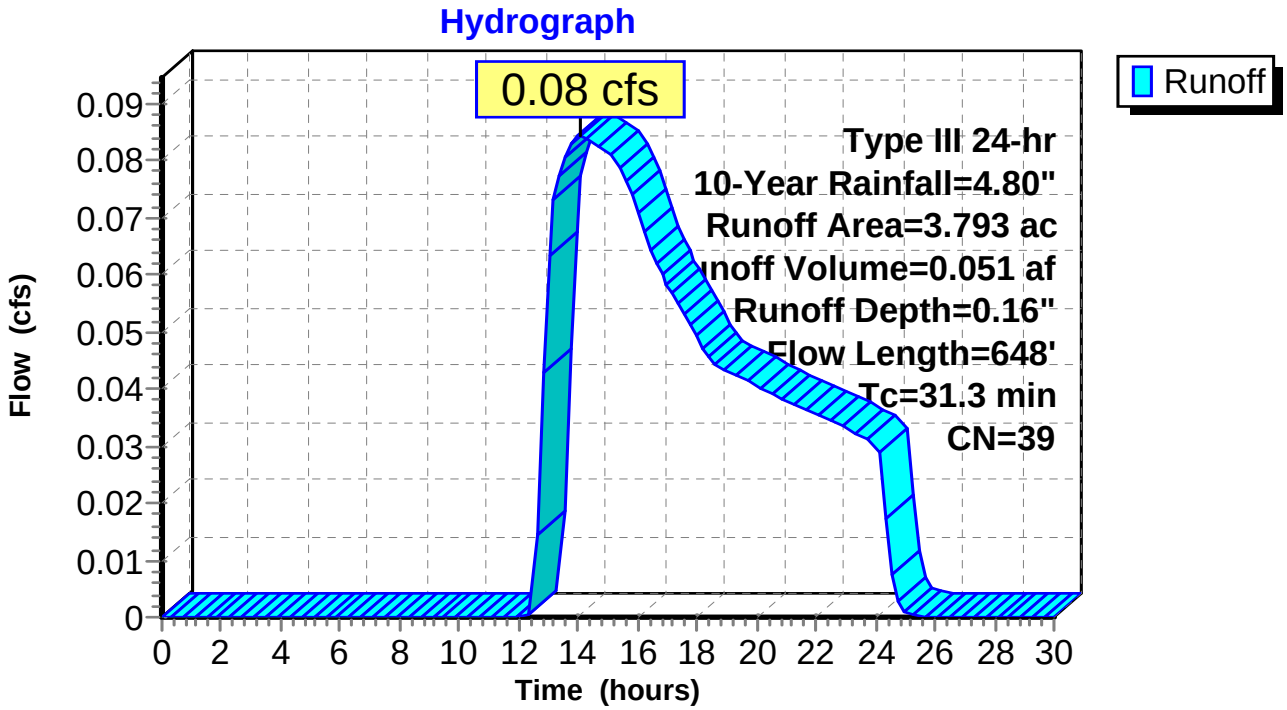
Runoff = 0.08 cfs @ 14.06 hrs, Volume= 0.051 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (ac)	CN	Description
3.793	39	Pasture/grassland/range, Good, HSG A
3.793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	100	0.1550	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
10.8	50	0.0100	0.08		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.20"
14.2	498	0.0070	0.59		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
31.3	648	Total			

Subcatchment PDA-3: PDA-3



Summary for Subcatchment PDA-4: PDA-4

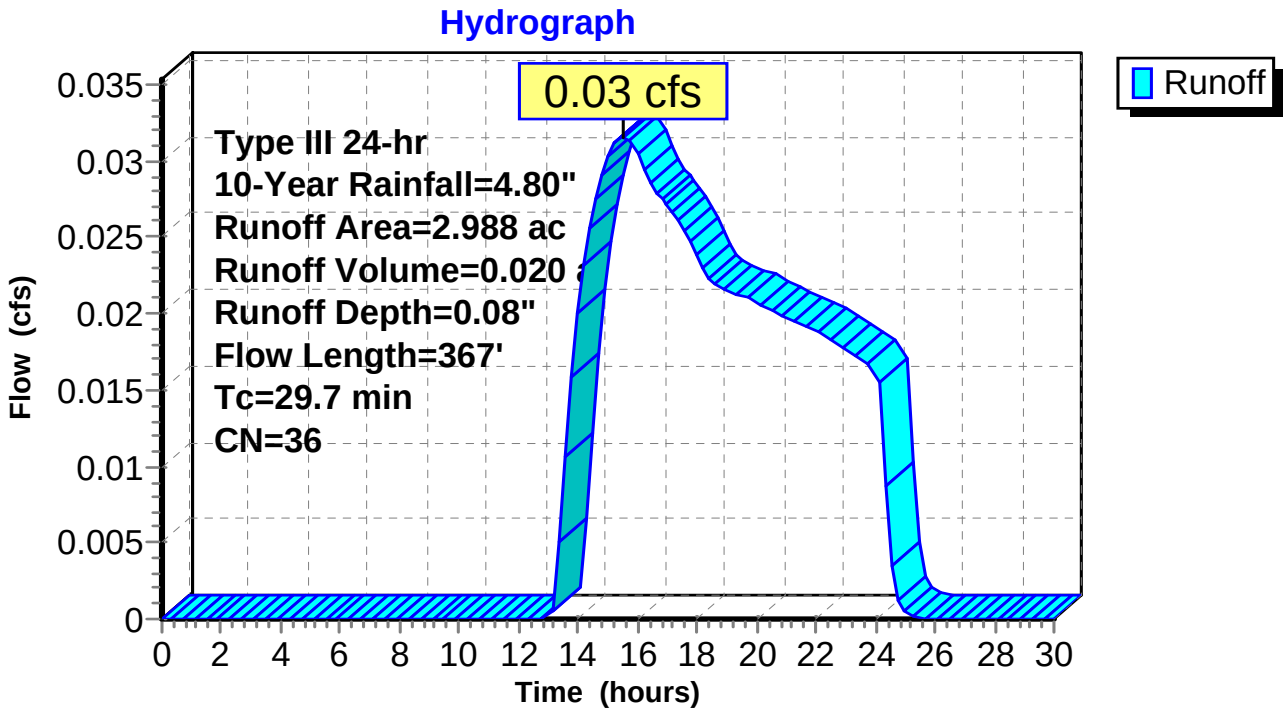
Runoff = 0.03 cfs @ 15.50 hrs, Volume= 0.020 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (ac)	CN	Description
2.080	39	Pasture/grassland/range, Good, HSG A
0.908	30	Woods, Good, HSG A
2.988	36	Weighted Average
2.988		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0100	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
3.5	187	0.0160	0.89		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.2	30	0.1660	2.04		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
29.7	367	Total			

Subcatchment PDA-4: PDA-4



Summary for Subcatchment PDA-5A: PDA-5A

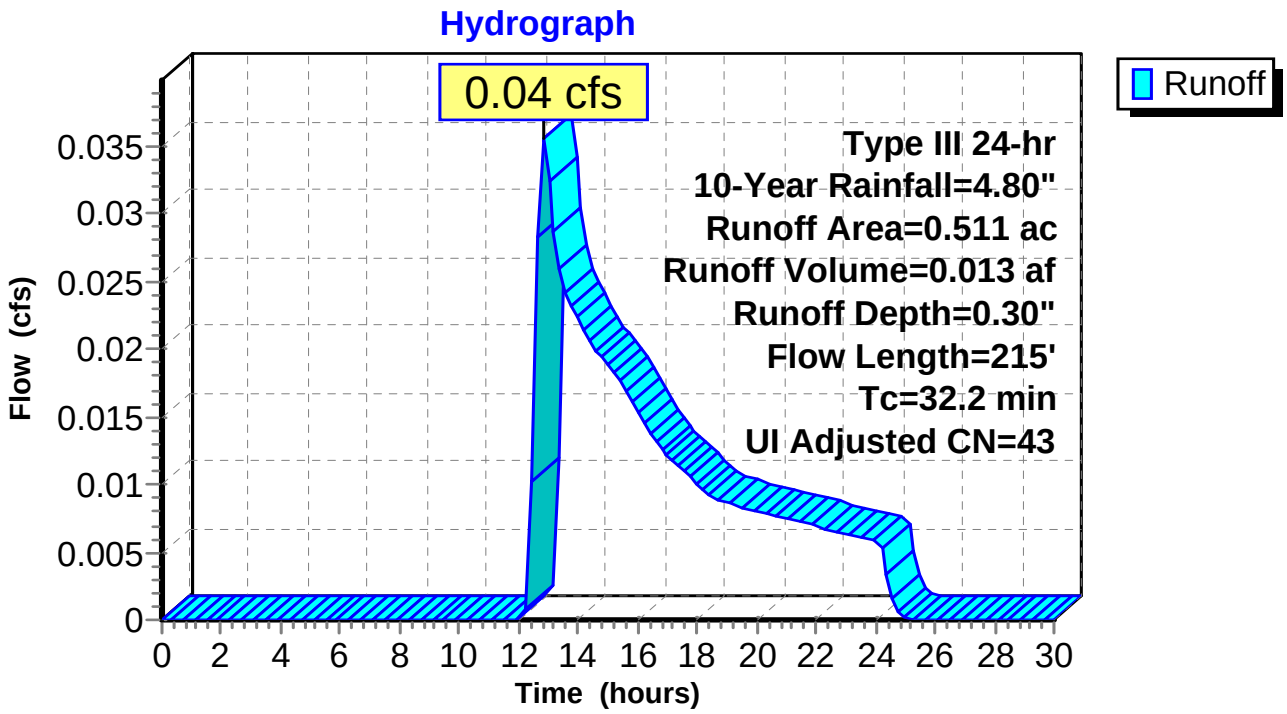
Runoff = 0.04 cfs @ 12.84 hrs, Volume= 0.013 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (ac)	CN	Adj	Description
0.026	96		Gravel surface, HSG A
0.469	39		Pasture/grassland/range, Good, HSG A
0.007	98		Unconnected pavement, HSG A
0.009	98		Unconnected pavement, HSG A
0.511	44	43	Weighted Average, UI Adjusted
0.495			96.87% Pervious Area
0.016			3.13% Impervious Area
0.016			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.9	150	0.0060	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.3	65	0.0615	3.72		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.2	215	Total			

Subcatchment PDA-5A: PDA-5A



Summary for Subcatchment PDA-5B: PDA-5B

[49] Hint: Tc<2dt may require smaller dt

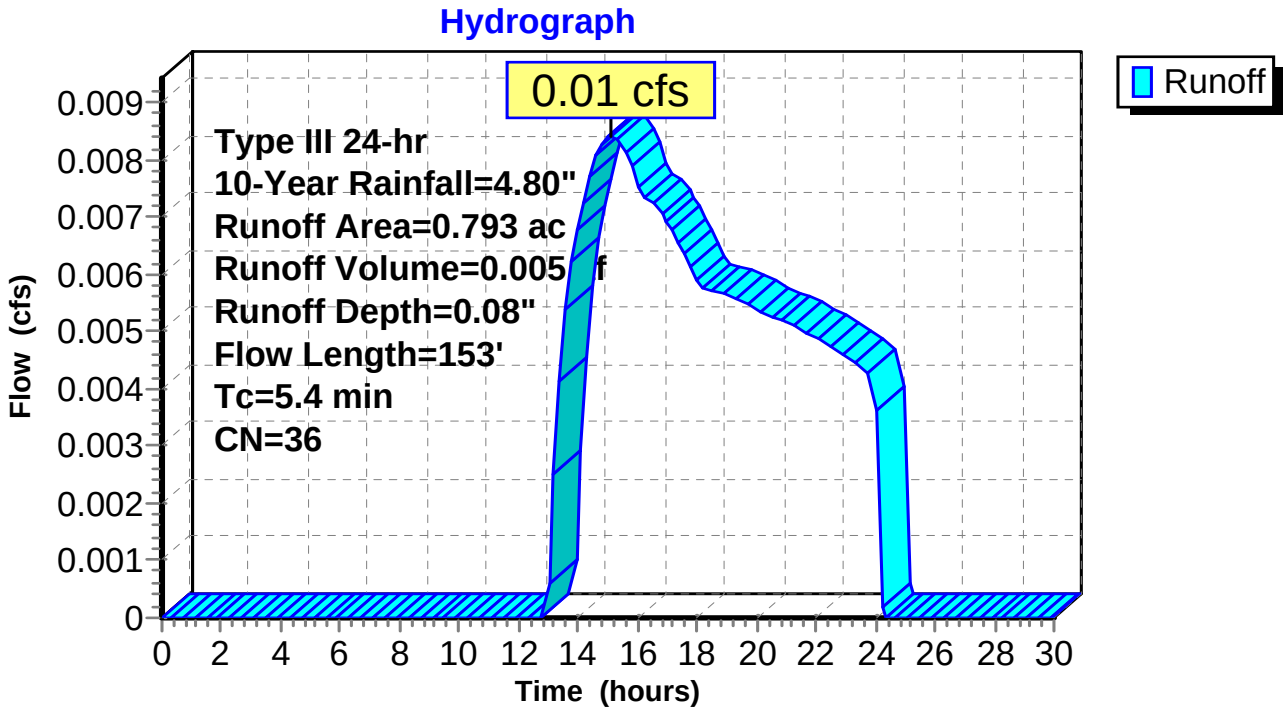
Runoff = 0.01 cfs @ 15.12 hrs, Volume= 0.005 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (ac)	CN	Description
0.211	39	Pasture/grassland/range, Good, HSG A
0.340	30	Woods, Good, HSG A
0.197	30	Woods, Good, HSG A
0.045	96	Gravel surface, HSG A
0.793	36	Weighted Average
0.793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	72	0.1700	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
0.7	81	0.0860	2.05		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
5.4	153	Total			

Subcatchment PDA-5B: PDA-5B



Summary for Subcatchment PDA-6: PDA-6

[49] Hint: Tc<2dt may require smaller dt

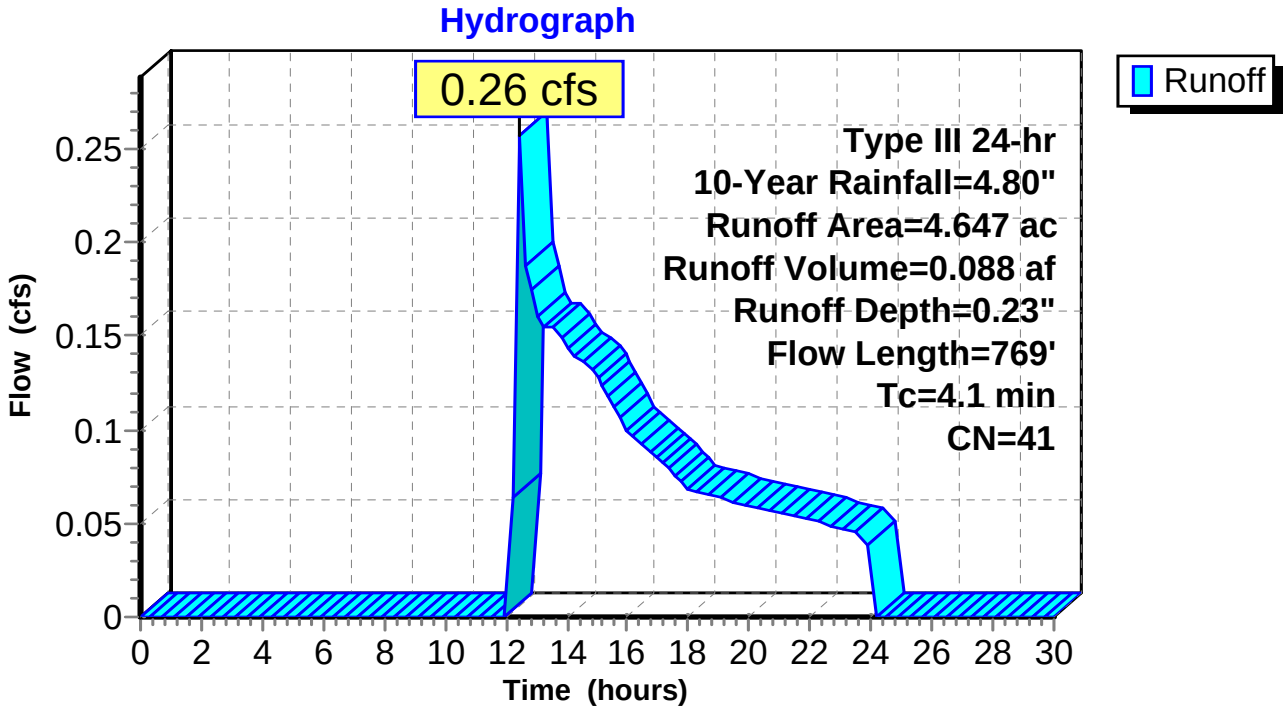
Runoff = 0.26 cfs @ 12.45 hrs, Volume= 0.088 af, Depth= 0.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (ac)	CN	Description
0.292	98	Paved parking, HSG B
0.149	96	Gravel surface, HSG A
1.887	30	Woods, Good, HSG A
2.319	39	Pasture/grassland/range, Good, HSG A
4.647	41	Weighted Average
4.355		93.72% Pervious Area
0.292		6.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	150	0.0200	1.49		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.20"
0.7	149	0.0333	3.70		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.7	223	0.1430	5.67		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
1.0	247	0.0800	4.24		**Shallow Concentrated Flow, D-E** Grassed Waterway Kv= 15.0 fps
4.1	769	Total			

Subcatchment PDA-6: PDA-6



Summary for Pond 1P: Infiltration Basin

Inflow Area = 0.511 ac, 3.13% Impervious, Inflow Depth = 0.30" for 10-Year event
Inflow = 0.04 cfs @ 12.84 hrs, Volume= 0.013 af
Outflow = 0.01 cfs @ 24.17 hrs, Volume= 0.007 af, Atten= 86%, Lag= 679.6 min
Discarded = 0.01 cfs @ 24.17 hrs, Volume= 0.007 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 323.46' @ 24.17 hrs Surf.Area= 738 sf Storage= 342 cf

Plug-Flow detention time= 438.3 min calculated for 0.007 af (56% of inflow)
Center-of-Mass det. time= 288.1 min (1,285.5 - 997.4)

Volume	Invert	Avail.Storage	Storage Description
#1	323.00'	4,674 cf	**Custom Stage Data (Irregular)** Listed below

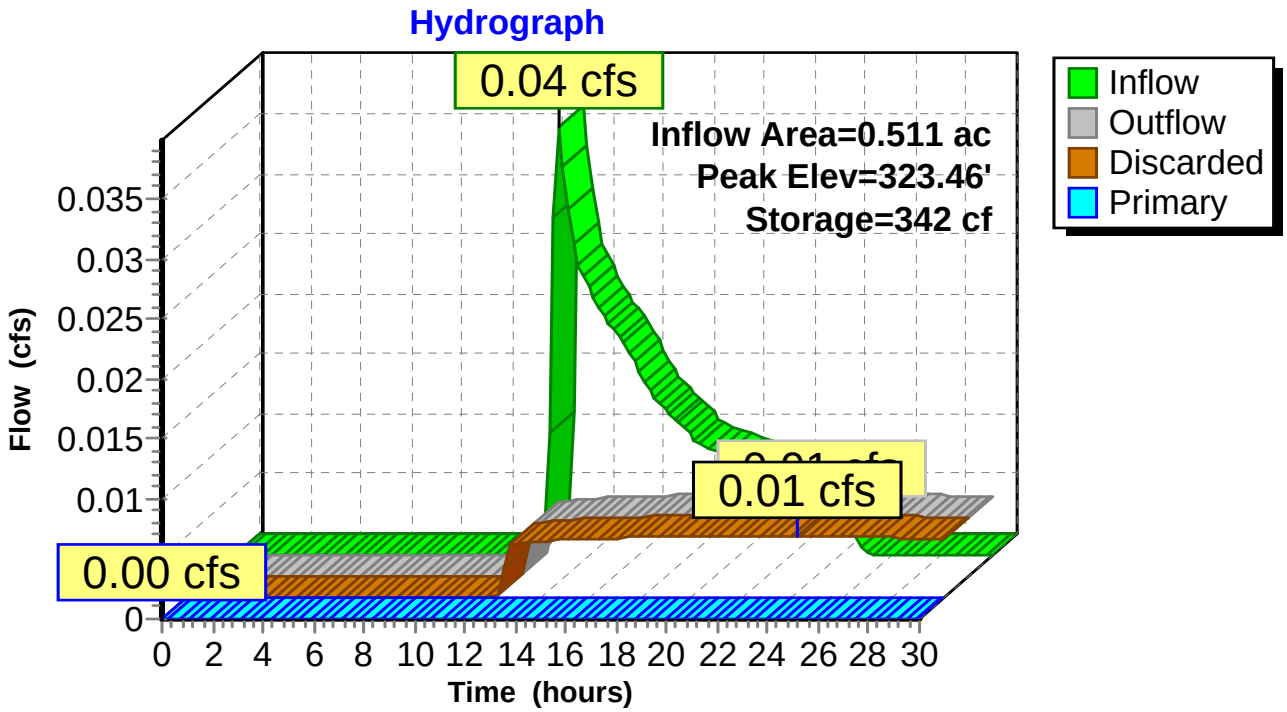
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
323.00	634	119.0	0	0	634
324.00	859	136.0	744	744	1,002
325.00	1,096	141.0	975	1,719	1,179
326.00	1,459	157.0	1,273	2,992	1,586
327.00	1,735	174.0	1,595	4,587	2,064
327.05	1,735	174.0	87	4,674	2,072

Device	Routing	Invert	Outlet Devices
#1	Primary	327.00'	**70.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	323.00'	**0.300 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.01 cfs @ 24.17 hrs HW=323.46' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=323.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Infiltration Basin

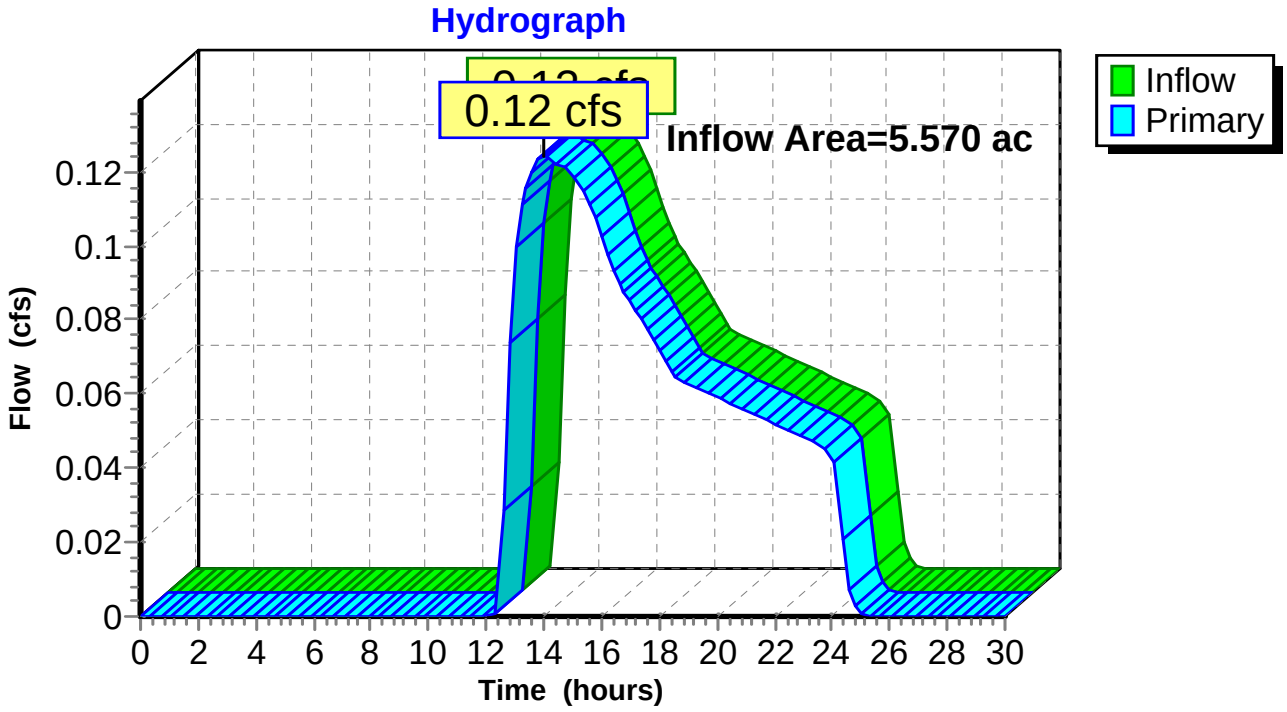


Summary for Link AP-1: AP-1

Inflow Area = 5.570 ac, 0.00% Impervious, Inflow Depth = 0.16" for 10-Year event
Inflow = 0.12 cfs @ 14.01 hrs, Volume= 0.075 af
Primary = 0.12 cfs @ 14.01 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-1: AP-1

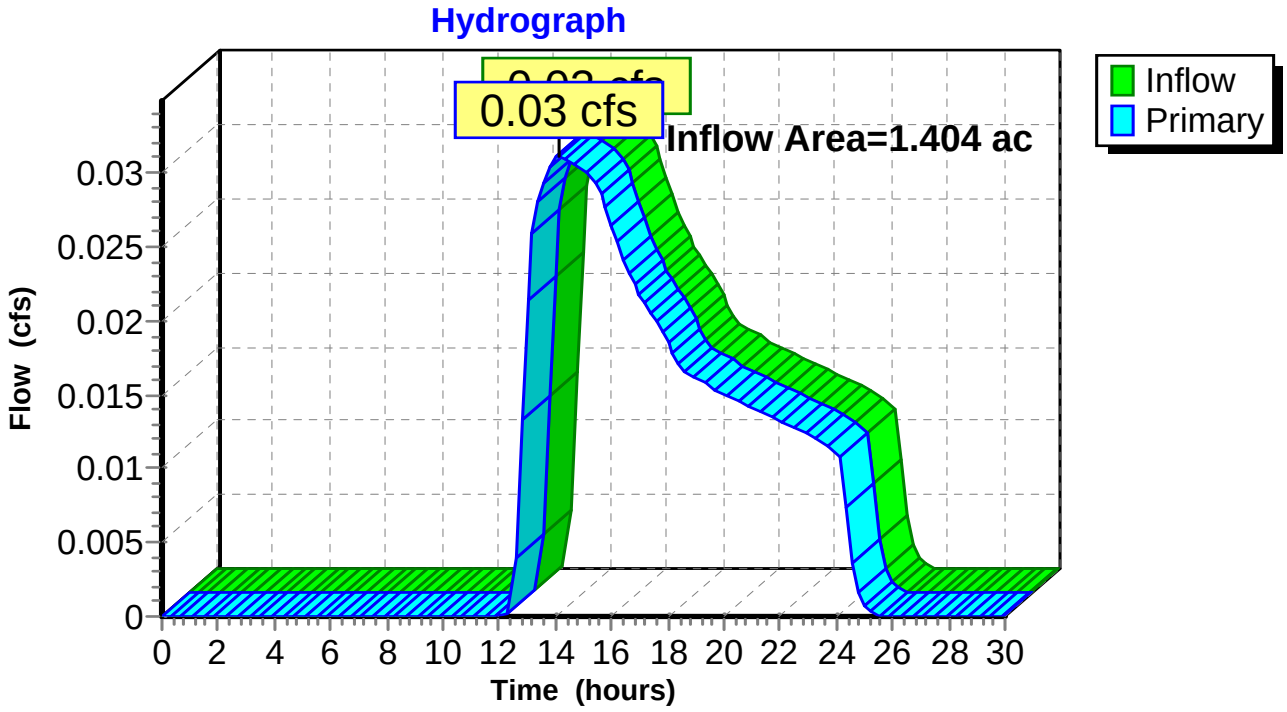


Summary for Link AP-2: AP-2

Inflow Area = 1.404 ac, 0.00% Impervious, Inflow Depth = 0.16" for 10-Year event
Inflow = 0.03 cfs @ 14.13 hrs, Volume= 0.019 af
Primary = 0.03 cfs @ 14.13 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-2: AP-2

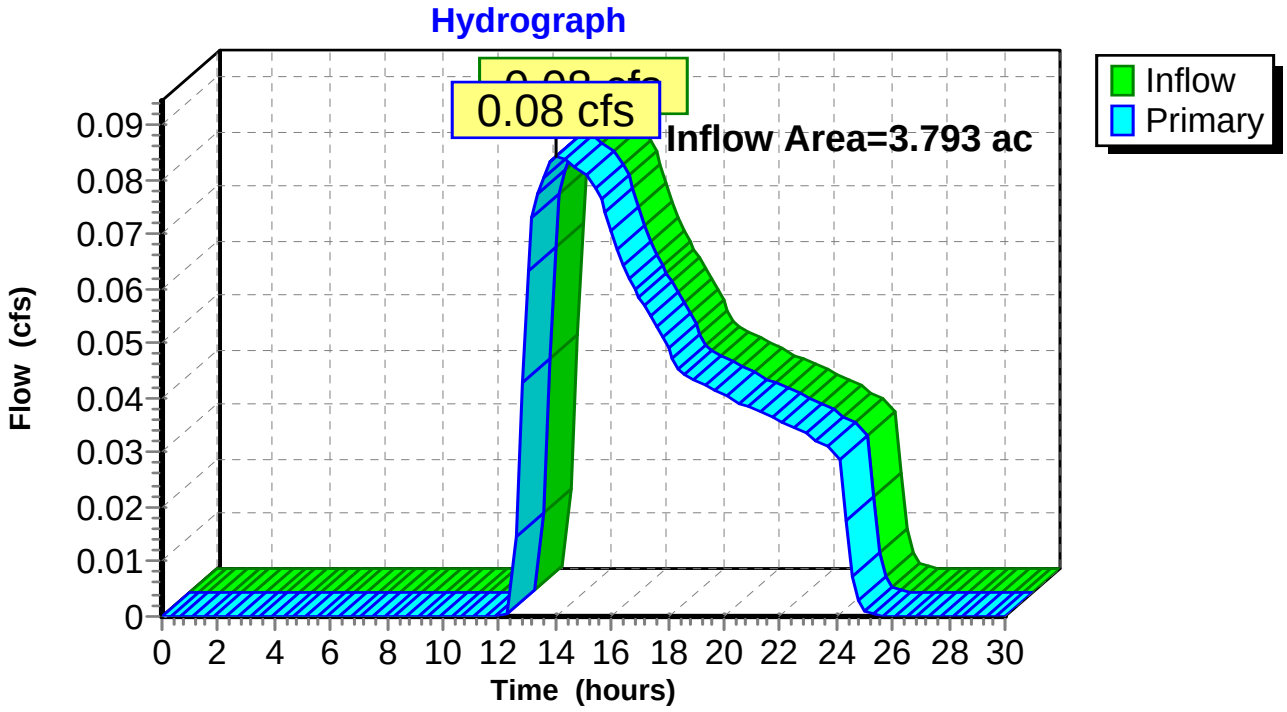


Summary for Link AP-3: AP-3

Inflow Area = 3.793 ac, 0.00% Impervious, Inflow Depth = 0.16" for 10-Year event
Inflow = 0.08 cfs @ 14.06 hrs, Volume= 0.051 af
Primary = 0.08 cfs @ 14.06 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-3: AP-3

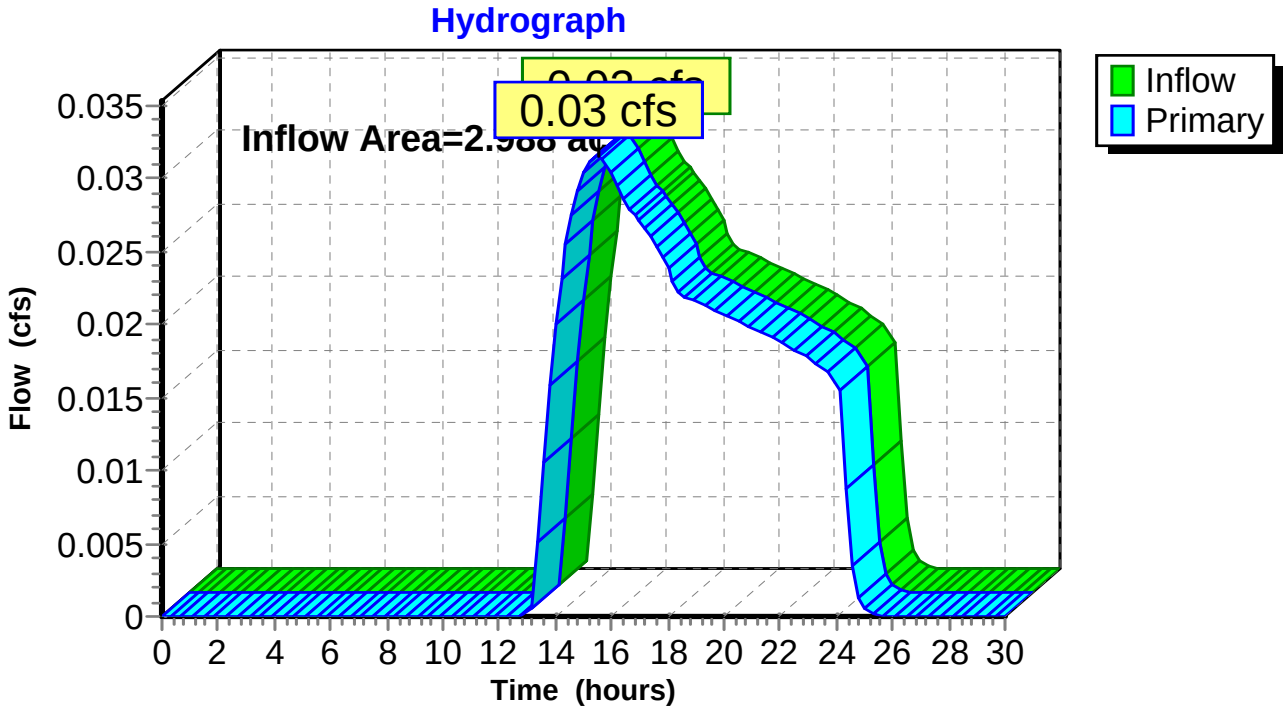


Summary for Link AP-4: AP-4

Inflow Area = 2.988 ac, 0.00% Impervious, Inflow Depth = 0.08" for 10-Year event
Inflow = 0.03 cfs @ 15.50 hrs, Volume= 0.020 af
Primary = 0.03 cfs @ 15.50 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-4: AP-4

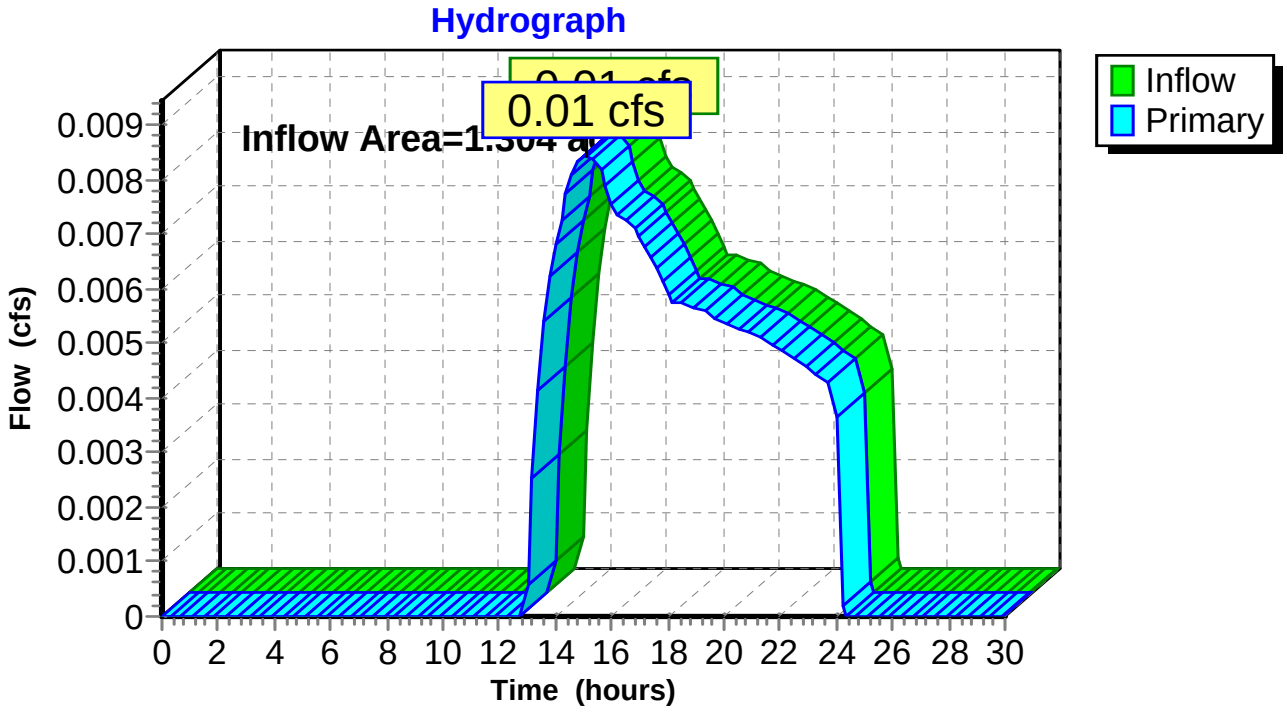


Summary for Link AP-5: AP-5

Inflow Area = 1.304 ac, 1.23% Impervious, Inflow Depth = 0.05" for 10-Year event
Inflow = 0.01 cfs @ 15.12 hrs, Volume= 0.005 af
Primary = 0.01 cfs @ 15.12 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-5: AP-5

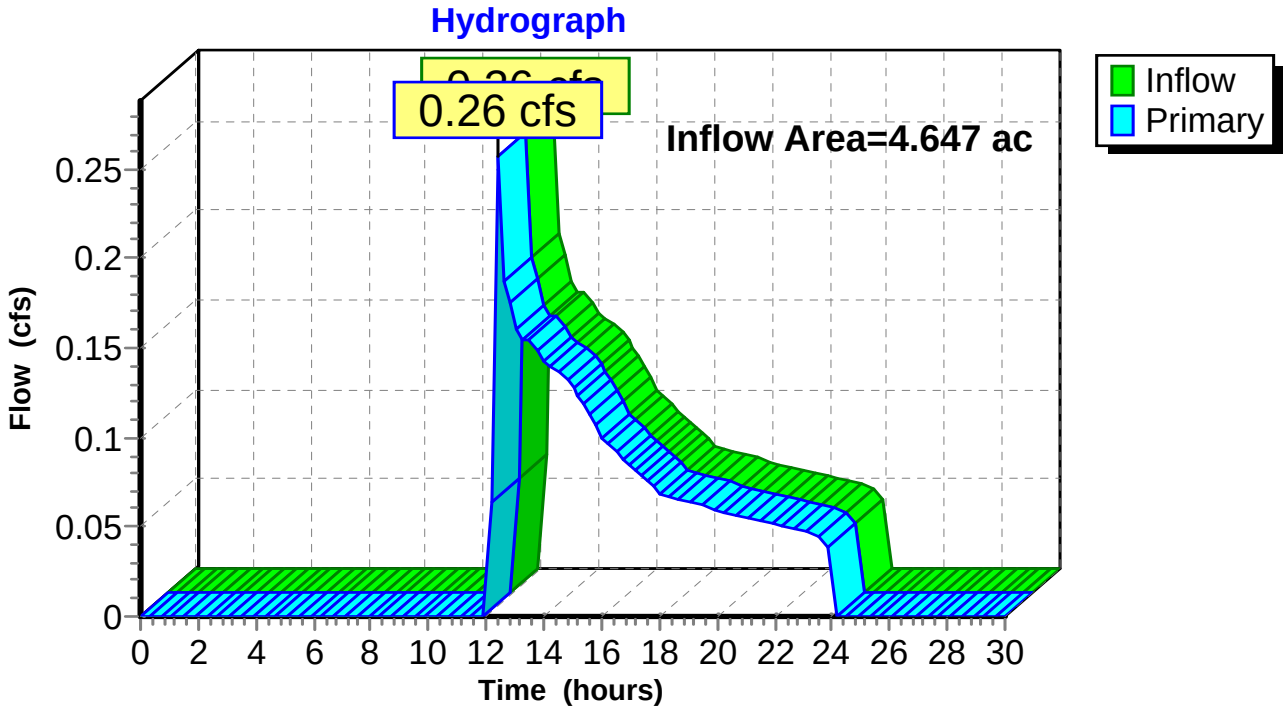


Summary for Link AP-6: AP-6

Inflow Area = 4.647 ac, 6.28% Impervious, Inflow Depth = 0.23" for 10-Year event
Inflow = 0.26 cfs @ 12.45 hrs, Volume= 0.088 af
Primary = 0.26 cfs @ 12.45 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-6: AP-6

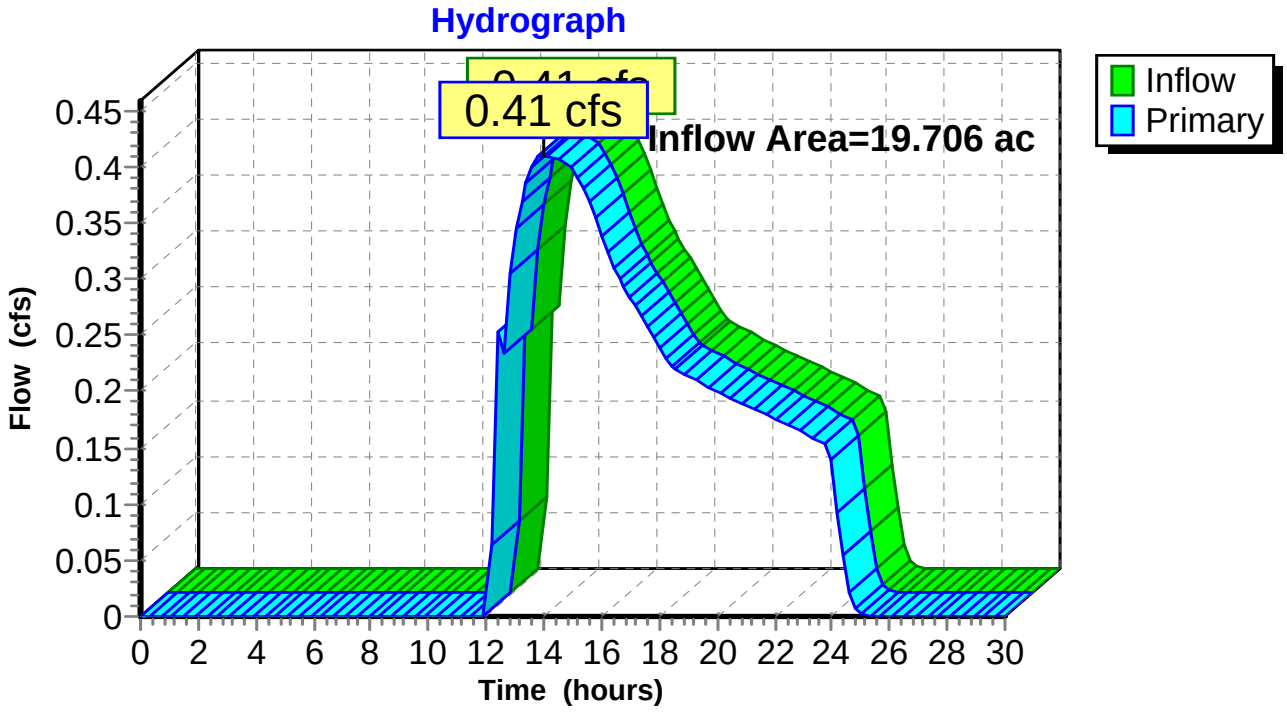


Summary for Link AP-FINAL: Quinnatisset Brook

Inflow Area = 19.706 ac, 1.56% Impervious, Inflow Depth = 0.16" for 10-Year event
Inflow = 0.41 cfs @ 14.03 hrs, Volume= 0.258 af
Primary = 0.41 cfs @ 14.03 hrs, Volume= 0.258 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-FINAL: Quinnatisset Brook



Summary for Subcatchment PDA-1: PDA-1

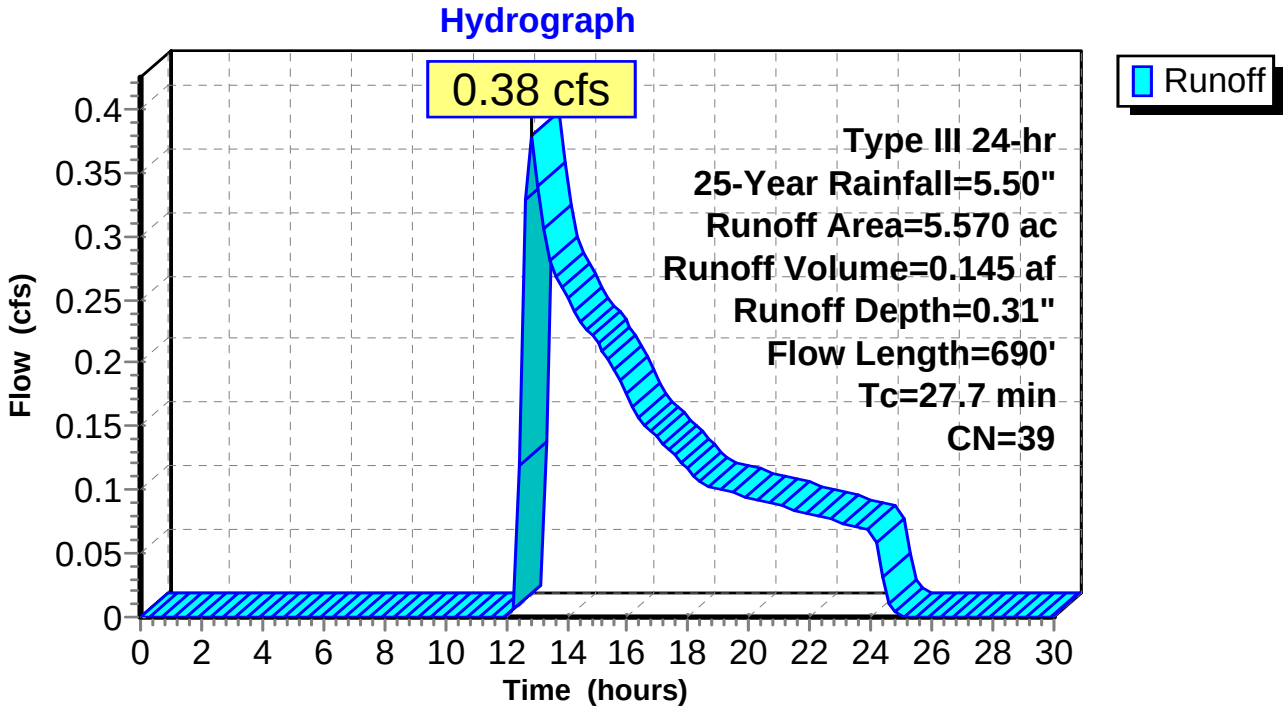
Runoff = 0.38 cfs @ 12.81 hrs, Volume= 0.145 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (ac)	CN	Description
5.570	39	Pasture/grassland/range, Good, HSG A
5.570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	150	0.0200	0.13		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
8.0	540	0.0260	1.13		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
27.7	690	Total			

Subcatchment PDA-1: PDA-1



Summary for Subcatchment PDA-2: PDA-2

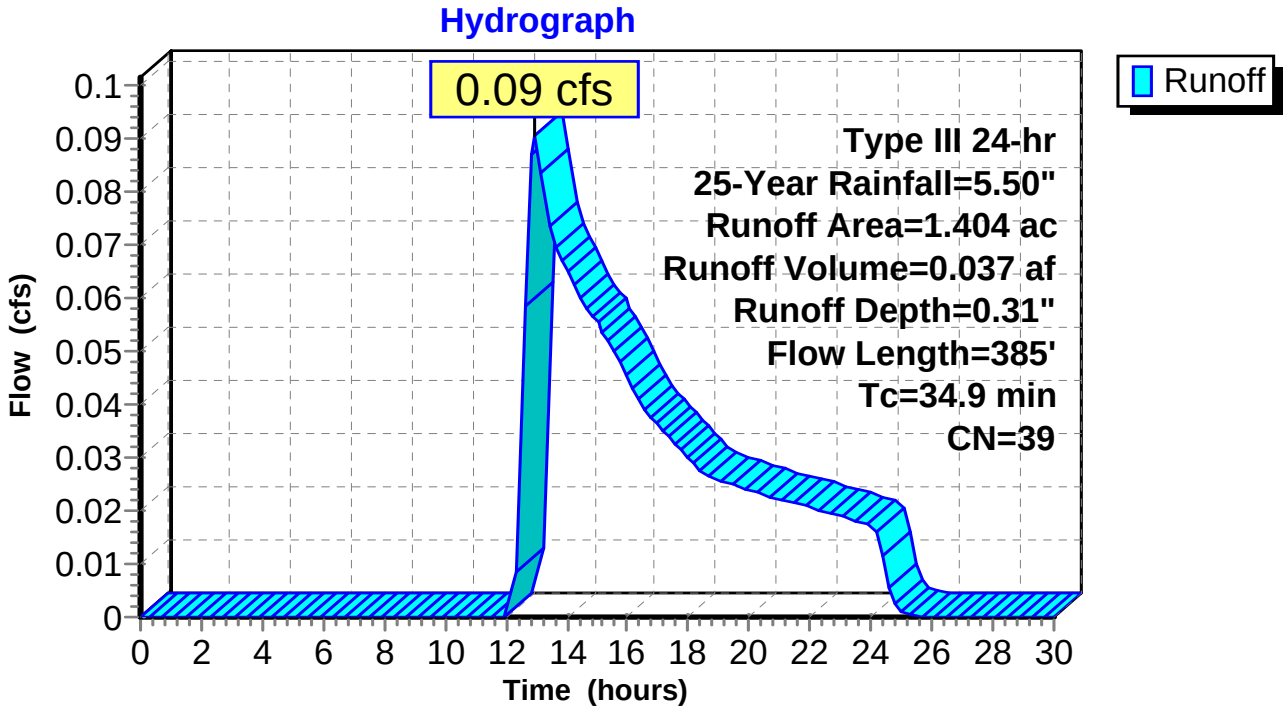
Runoff = 0.09 cfs @ 12.90 hrs, Volume= 0.037 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (ac)	CN	Description
1.404	39	Pasture/grassland/range, Good, HSG A
1.404		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.8	150	0.0066	0.08		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
4.1	235	0.0190	0.96		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
34.9	385	Total			

Subcatchment PDA-2: PDA-2



Summary for Subcatchment PDA-3: PDA-3

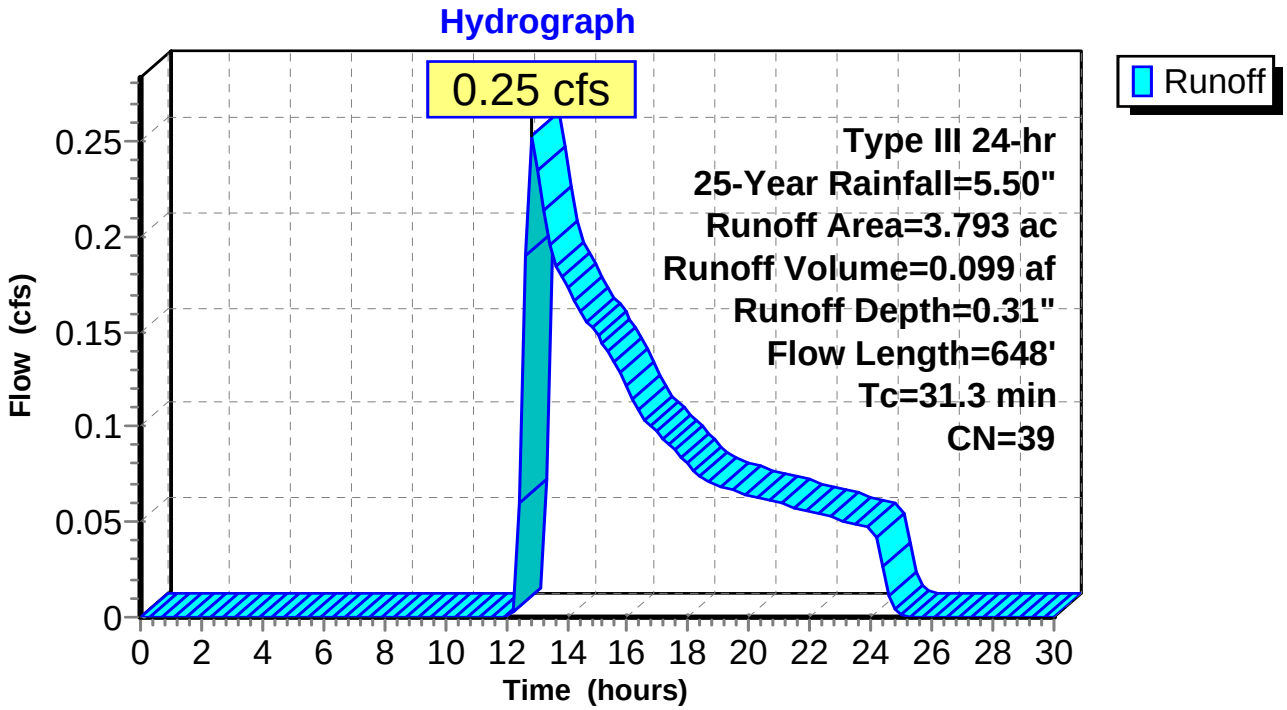
Runoff = 0.25 cfs @ 12.86 hrs, Volume= 0.099 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (ac)	CN	Description
3.793	39	Pasture/grassland/range, Good, HSG A
3.793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	100	0.1550	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
10.8	50	0.0100	0.08		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.20"
14.2	498	0.0070	0.59		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
31.3	648	Total			

Subcatchment PDA-3: PDA-3



Summary for Subcatchment PDA-4: PDA-4

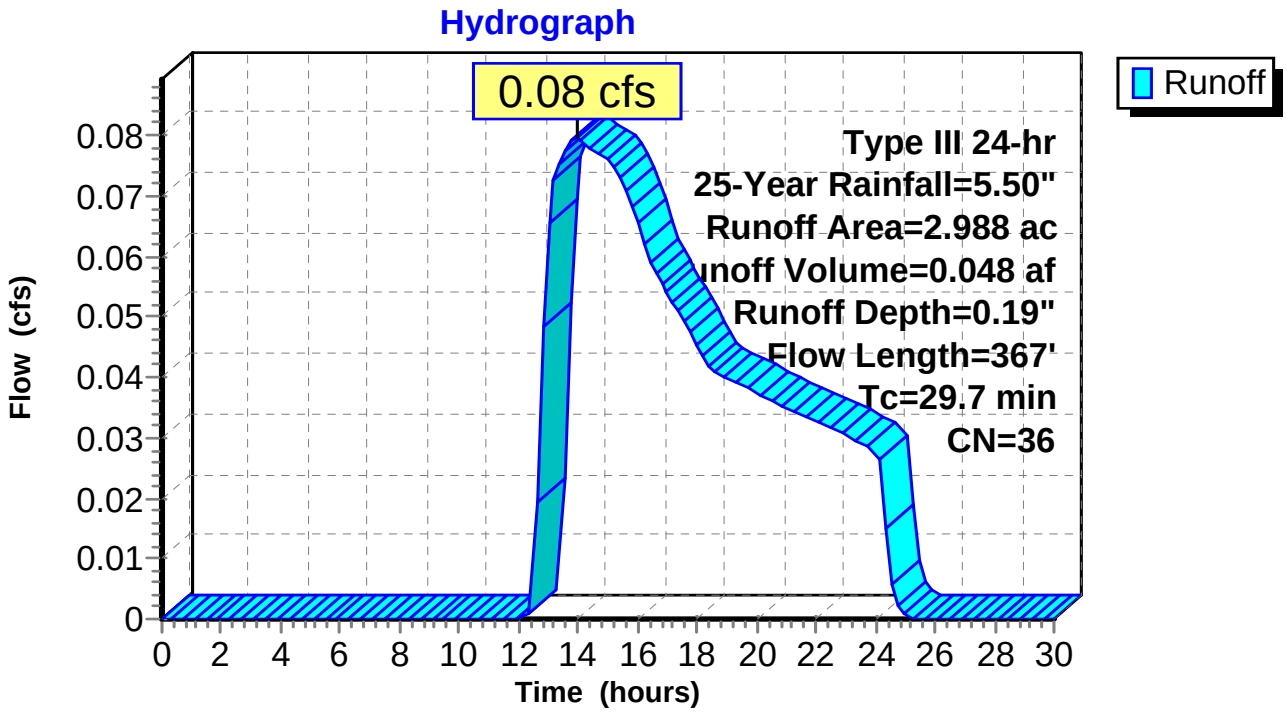
Runoff = 0.08 cfs @ 14.00 hrs, Volume= 0.048 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (ac)	CN	Description
2.080	39	Pasture/grassland/range, Good, HSG A
0.908	30	Woods, Good, HSG A
2.988	36	Weighted Average
2.988		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0100	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
3.5	187	0.0160	0.89		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.2	30	0.1660	2.04		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
29.7	367	Total			

Subcatchment PDA-4: PDA-4



Summary for Subcatchment PDA-5A: PDA-5A

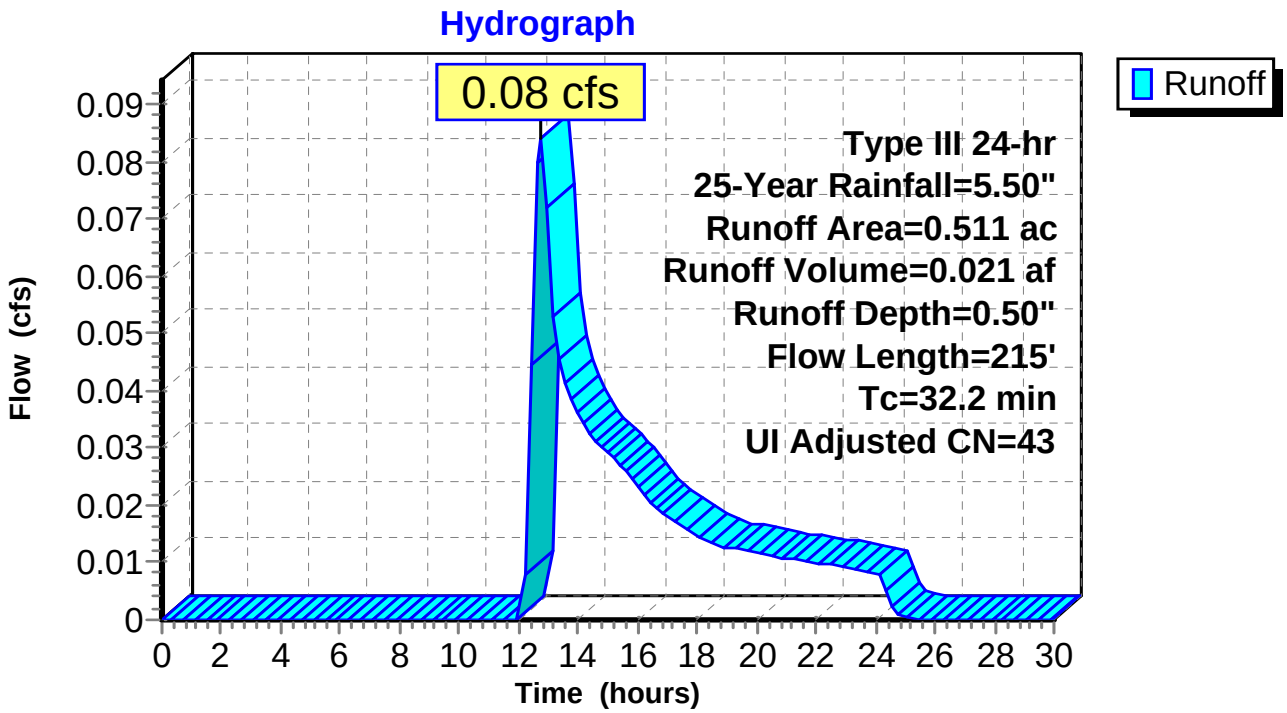
Runoff = 0.08 cfs @ 12.70 hrs, Volume= 0.021 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (ac)	CN	Adj	Description
0.026	96		Gravel surface, HSG A
0.469	39		Pasture/grassland/range, Good, HSG A
0.007	98		Unconnected pavement, HSG A
0.009	98		Unconnected pavement, HSG A
0.511	44	43	Weighted Average, UI Adjusted
0.495			96.87% Pervious Area
0.016			3.13% Impervious Area
0.016			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.9	150	0.0060	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.3	65	0.0615	3.72		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.2	215	Total			

Subcatchment PDA-5A: PDA-5A



Summary for Subcatchment PDA-5B: PDA-5B

[49] Hint: Tc<2dt may require smaller dt

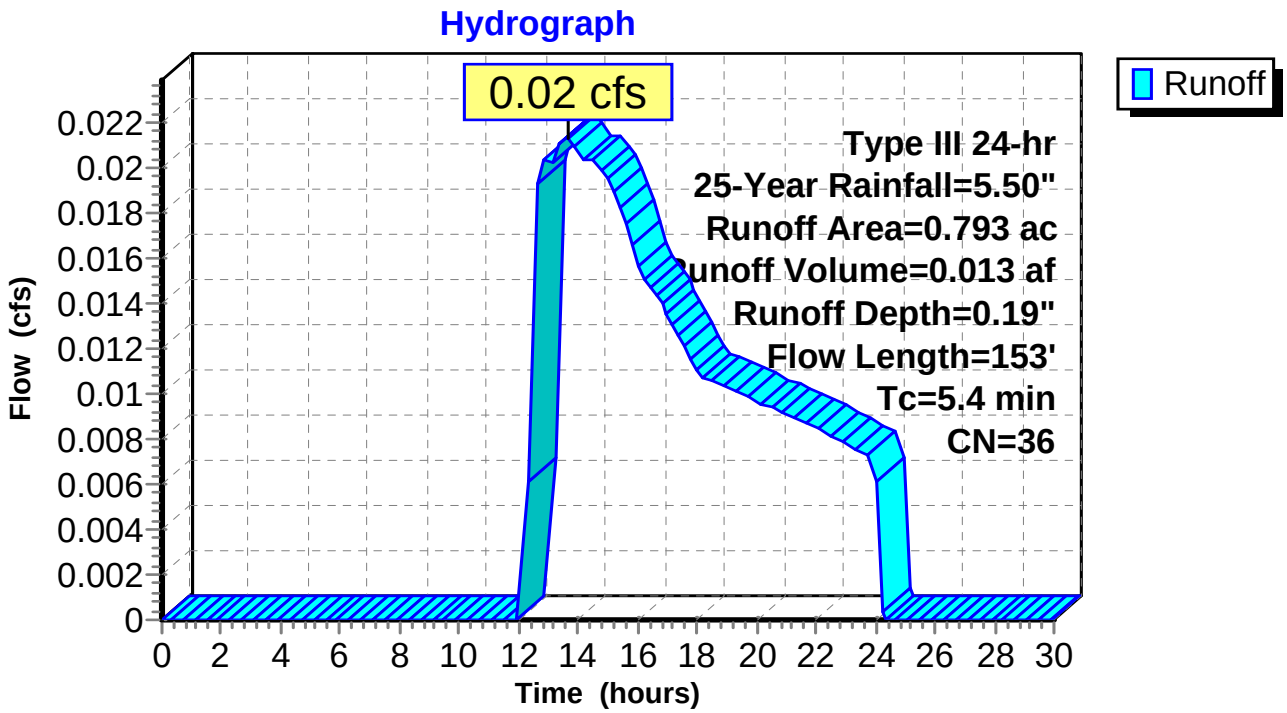
Runoff = 0.02 cfs @ 13.64 hrs, Volume= 0.013 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (ac)	CN	Description
0.211	39	Pasture/grassland/range, Good, HSG A
0.340	30	Woods, Good, HSG A
0.197	30	Woods, Good, HSG A
0.045	96	Gravel surface, HSG A
0.793	36	Weighted Average
0.793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	72	0.1700	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
0.7	81	0.0860	2.05		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
5.4	153	Total			

Subcatchment PDA-5B: PDA-5B



Summary for Subcatchment PDA-6: PDA-6

[49] Hint: Tc<2dt may require smaller dt

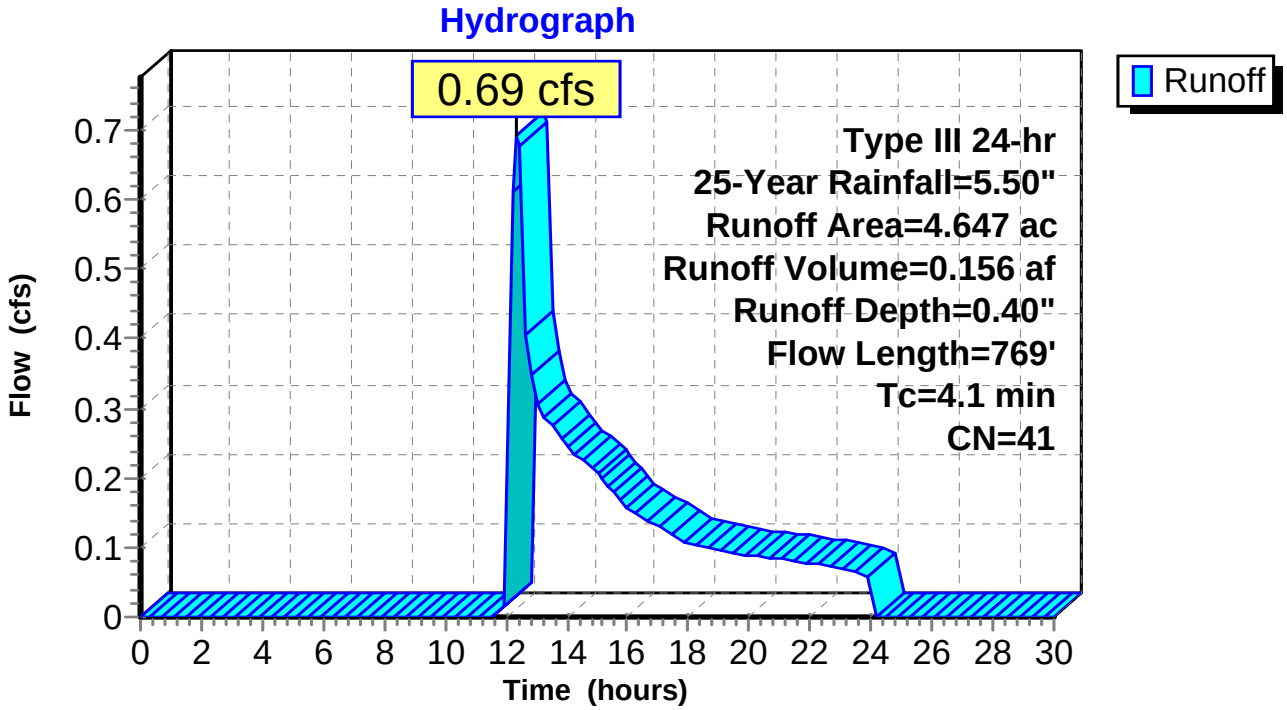
Runoff = 0.69 cfs @ 12.34 hrs, Volume= 0.156 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (ac)	CN	Description
0.292	98	Paved parking, HSG B
0.149	96	Gravel surface, HSG A
1.887	30	Woods, Good, HSG A
2.319	39	Pasture/grassland/range, Good, HSG A
4.647	41	Weighted Average
4.355		93.72% Pervious Area
0.292		6.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	150	0.0200	1.49		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.20"
0.7	149	0.0333	3.70		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.7	223	0.1430	5.67		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
1.0	247	0.0800	4.24		**Shallow Concentrated Flow, D-E** Grassed Waterway Kv= 15.0 fps
4.1	769	Total			

Subcatchment PDA-6: PDA-6



Summary for Pond 1P: Infiltration Basin

Inflow Area = 0.511 ac, 3.13% Impervious, Inflow Depth = 0.50" for 25-Year event
Inflow = 0.08 cfs @ 12.70 hrs, Volume= 0.021 af
Outflow = 0.01 cfs @ 24.33 hrs, Volume= 0.008 af, Atten= 93%, Lag= 697.6 min
Discarded = 0.01 cfs @ 24.33 hrs, Volume= 0.008 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 323.93' @ 24.33 hrs Surf.Area= 843 sf Storage= 692 cf

Plug-Flow detention time= 497.7 min calculated for 0.008 af (38% of inflow)
Center-of-Mass det. time= 318.0 min (1,286.0 - 968.0)

Volume	Invert	Avail.Storage	Storage Description
#1	323.00'	4,674 cf	**Custom Stage Data (Irregular)**Listed below

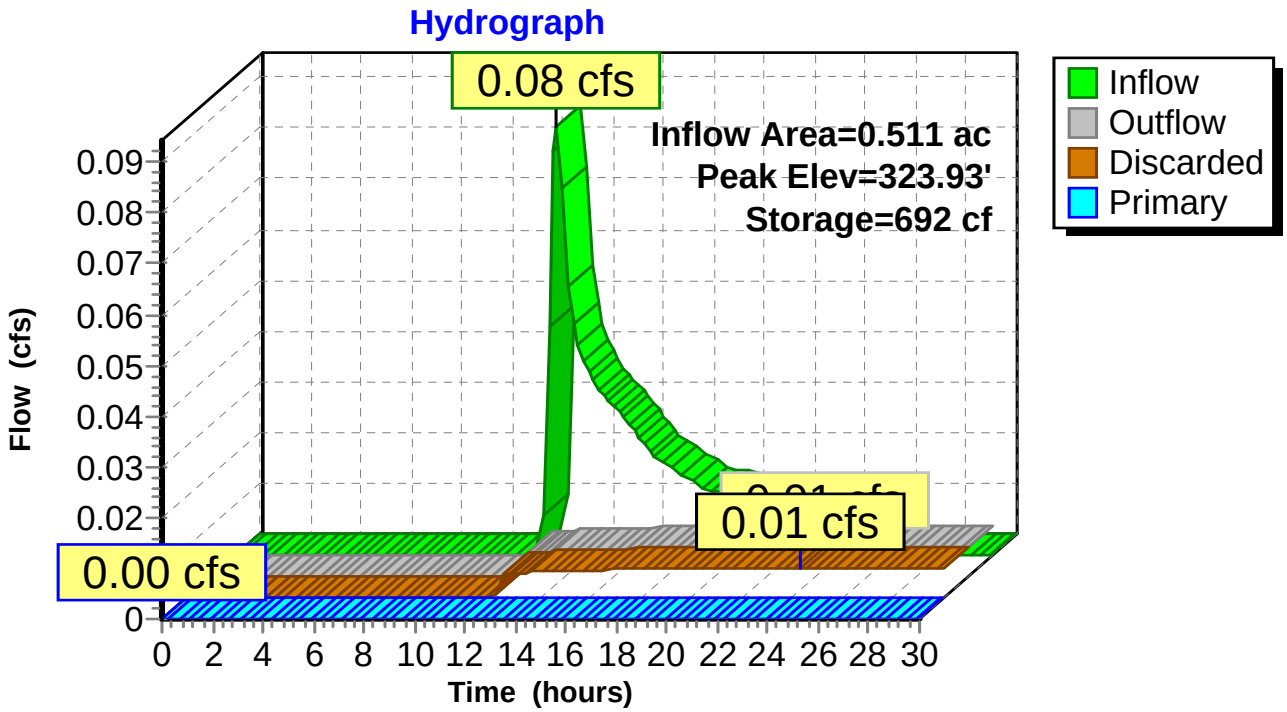
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
323.00	634	119.0	0	0	634
324.00	859	136.0	744	744	1,002
325.00	1,096	141.0	975	1,719	1,179
326.00	1,459	157.0	1,273	2,992	1,586
327.00	1,735	174.0	1,595	4,587	2,064
327.05	1,735	174.0	87	4,674	2,072

Device	Routing	Invert	Outlet Devices
#1	Primary	327.00'	**70.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	323.00'	**0.300 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.01 cfs @ 24.33 hrs HW=323.93' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=323.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Infiltration Basin

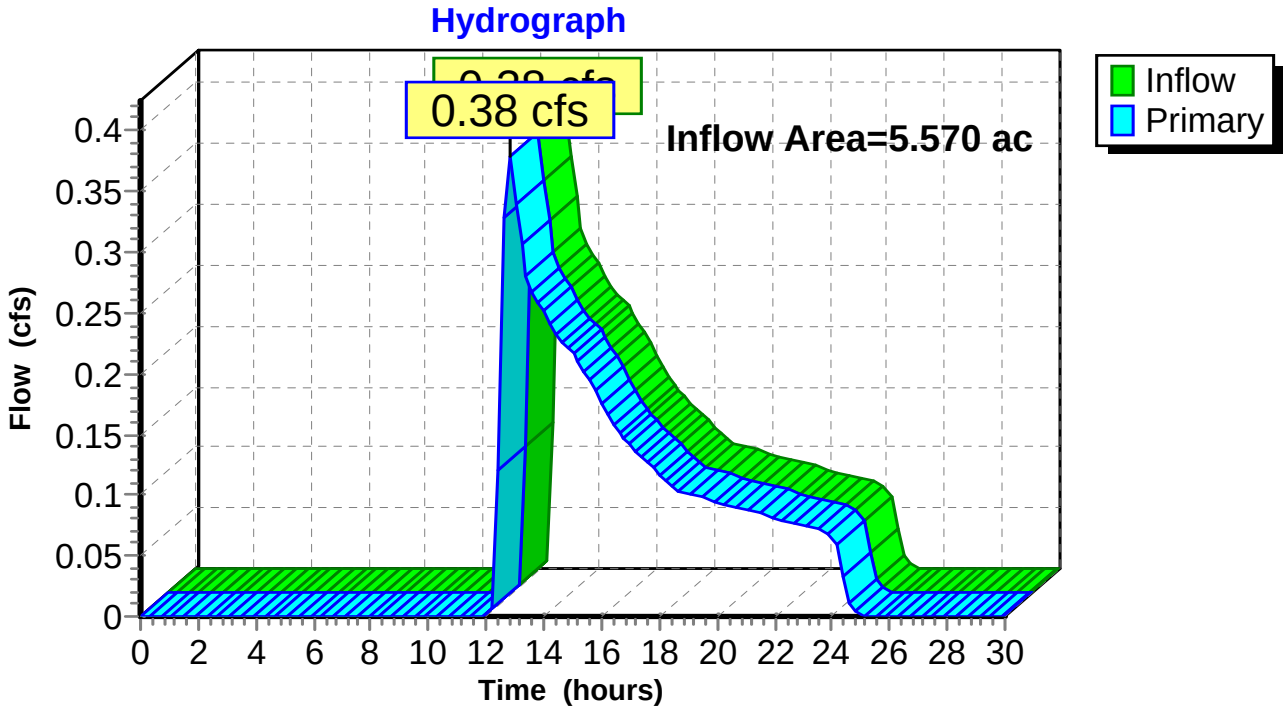


Summary for Link AP-1: AP-1

Inflow Area = 5.570 ac, 0.00% Impervious, Inflow Depth = 0.31" for 25-Year event
Inflow = 0.38 cfs @ 12.81 hrs, Volume= 0.145 af
Primary = 0.38 cfs @ 12.81 hrs, Volume= 0.145 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-1: AP-1

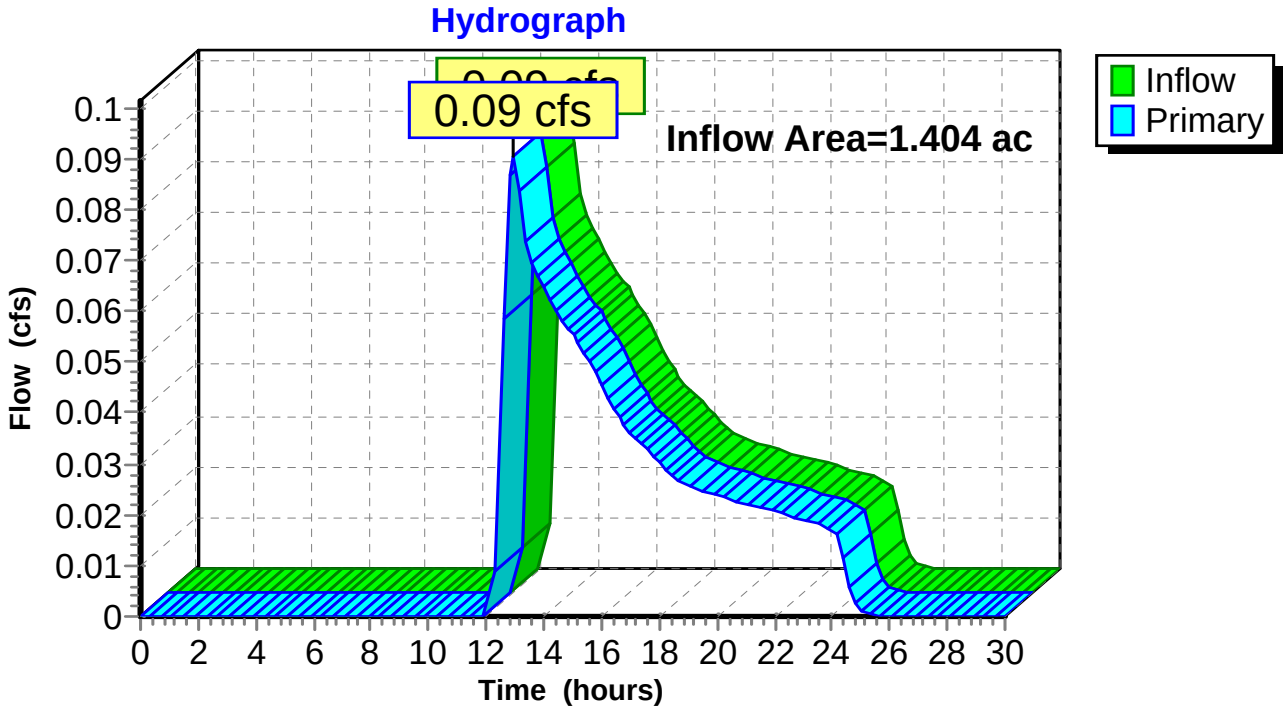


Summary for Link AP-2: AP-2

Inflow Area = 1.404 ac, 0.00% Impervious, Inflow Depth = 0.31" for 25-Year event
Inflow = 0.09 cfs @ 12.90 hrs, Volume= 0.037 af
Primary = 0.09 cfs @ 12.90 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-2: AP-2

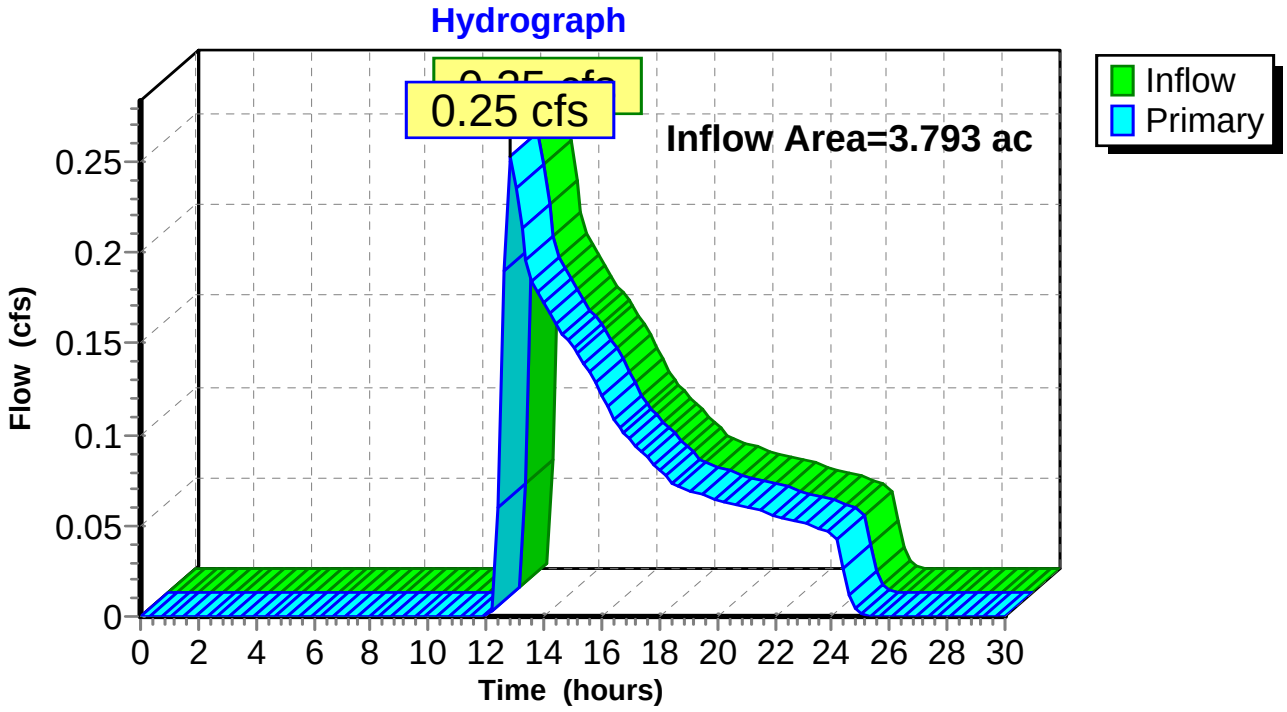


Summary for Link AP-3: AP-3

Inflow Area = 3.793 ac, 0.00% Impervious, Inflow Depth = 0.31" for 25-Year event
Inflow = 0.25 cfs @ 12.86 hrs, Volume= 0.099 af
Primary = 0.25 cfs @ 12.86 hrs, Volume= 0.099 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-3: AP-3

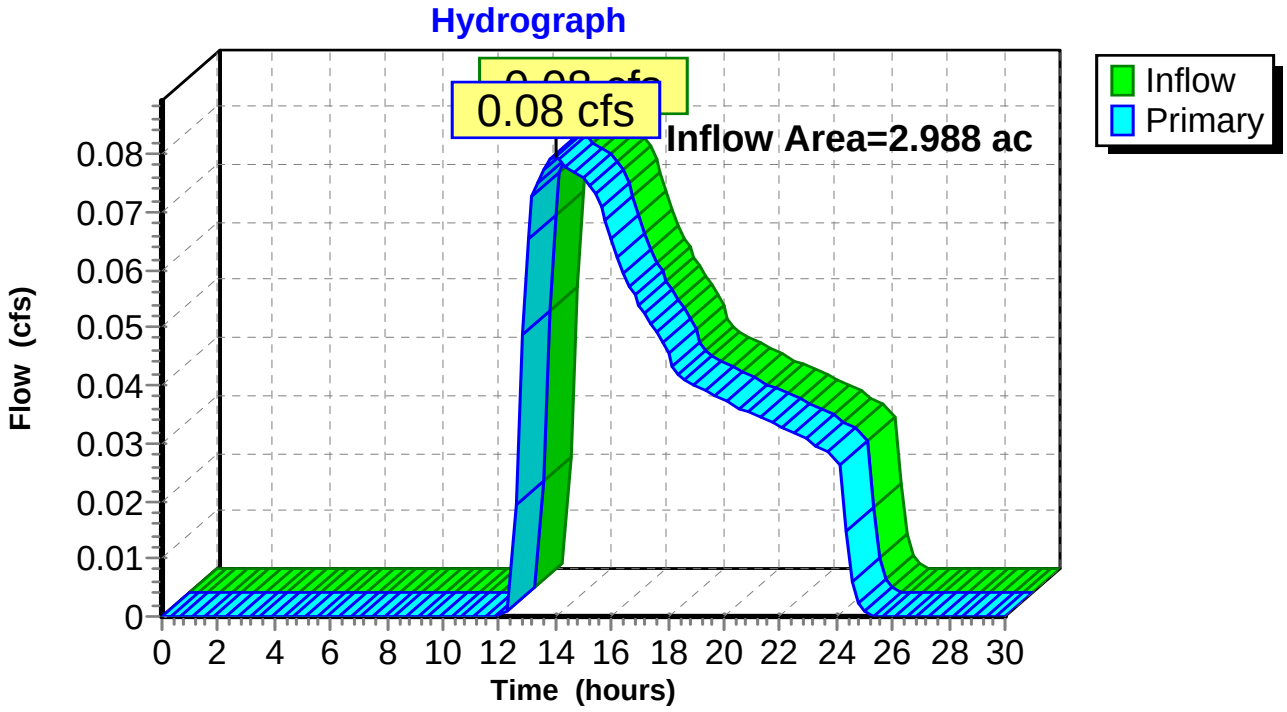


Summary for Link AP-4: AP-4

Inflow Area = 2.988 ac, 0.00% Impervious, Inflow Depth = 0.19" for 25-Year event
Inflow = 0.08 cfs @ 14.00 hrs, Volume= 0.048 af
Primary = 0.08 cfs @ 14.00 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-4: AP-4

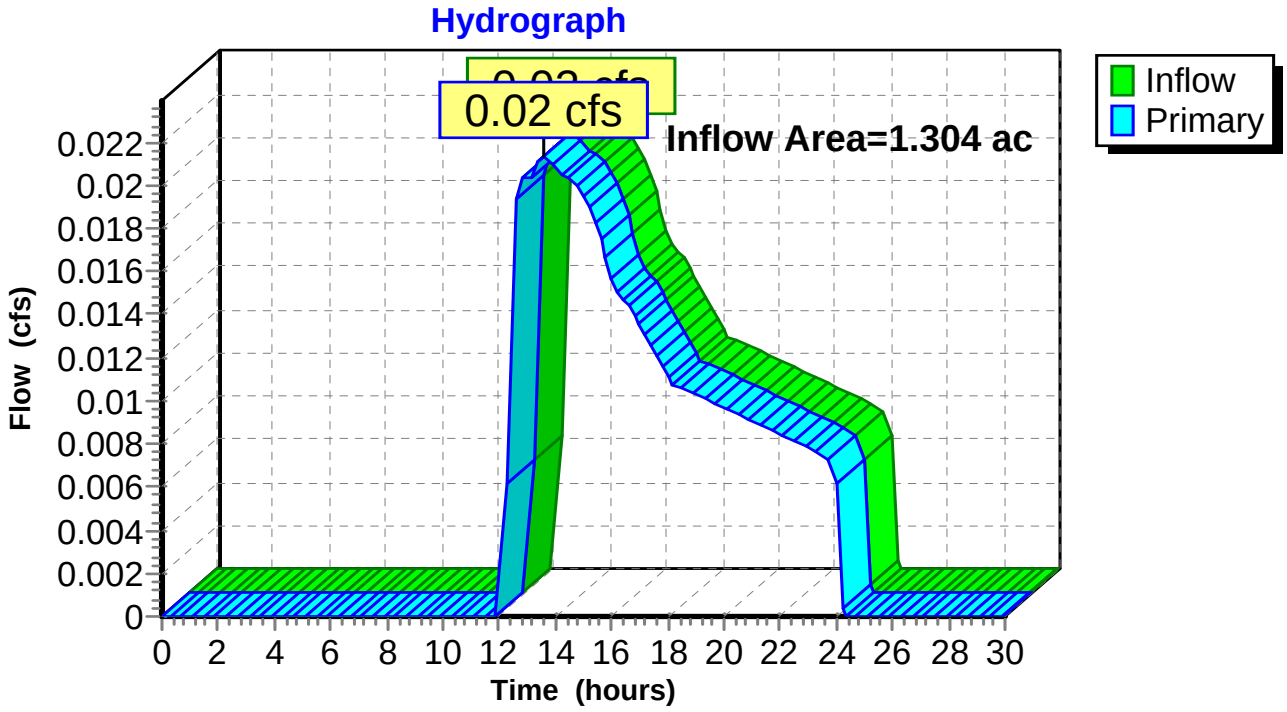


Summary for Link AP-5: AP-5

Inflow Area = 1.304 ac, 1.23% Impervious, Inflow Depth = 0.12" for 25-Year event
Inflow = 0.02 cfs @ 13.64 hrs, Volume= 0.013 af
Primary = 0.02 cfs @ 13.64 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-5: AP-5

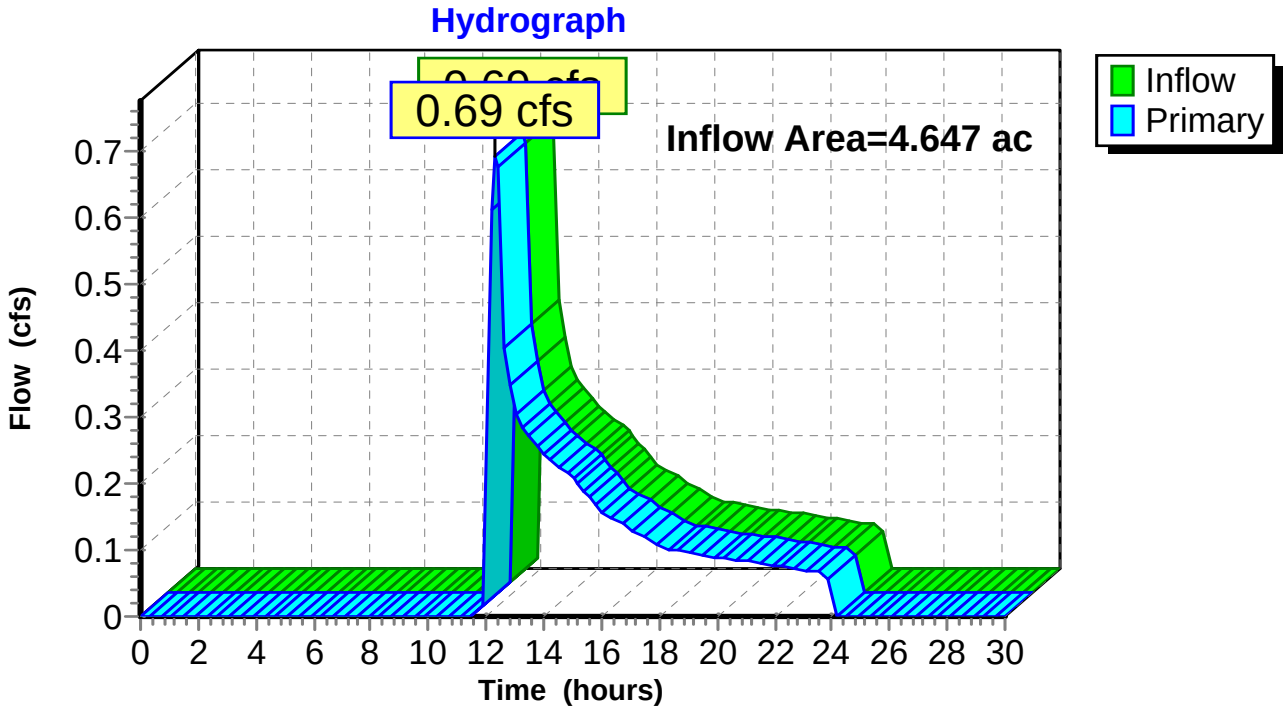


Summary for Link AP-6: AP-6

Inflow Area = 4.647 ac, 6.28% Impervious, Inflow Depth = 0.40" for 25-Year event
Inflow = 0.69 cfs @ 12.34 hrs, Volume= 0.156 af
Primary = 0.69 cfs @ 12.34 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-6: AP-6

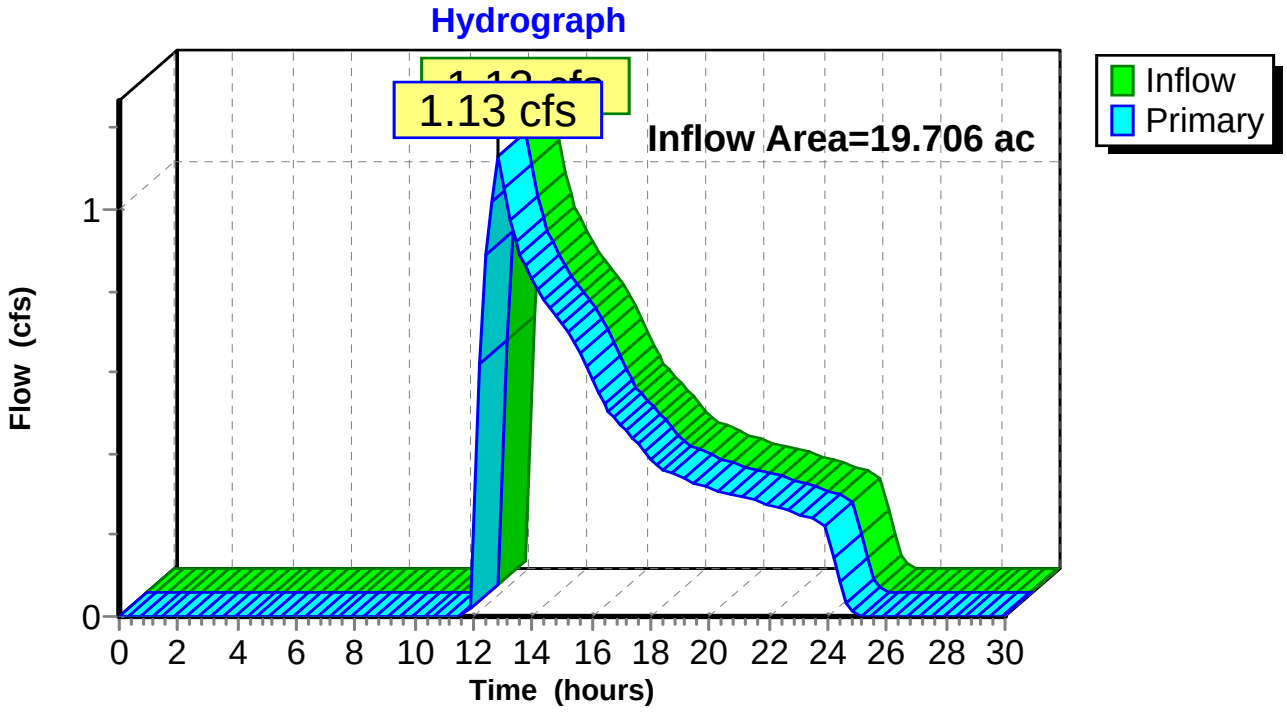


Summary for Link AP-FINAL: Quinnatisset Brook

Inflow Area = 19.706 ac, 1.56% Impervious, Inflow Depth = 0.30" for 25-Year event
Inflow = 1.13 cfs @ 12.82 hrs, Volume= 0.497 af
Primary = 1.13 cfs @ 12.82 hrs, Volume= 0.497 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-FINAL: Quinnatisset Brook



Summary for Subcatchment PDA-1: PDA-1

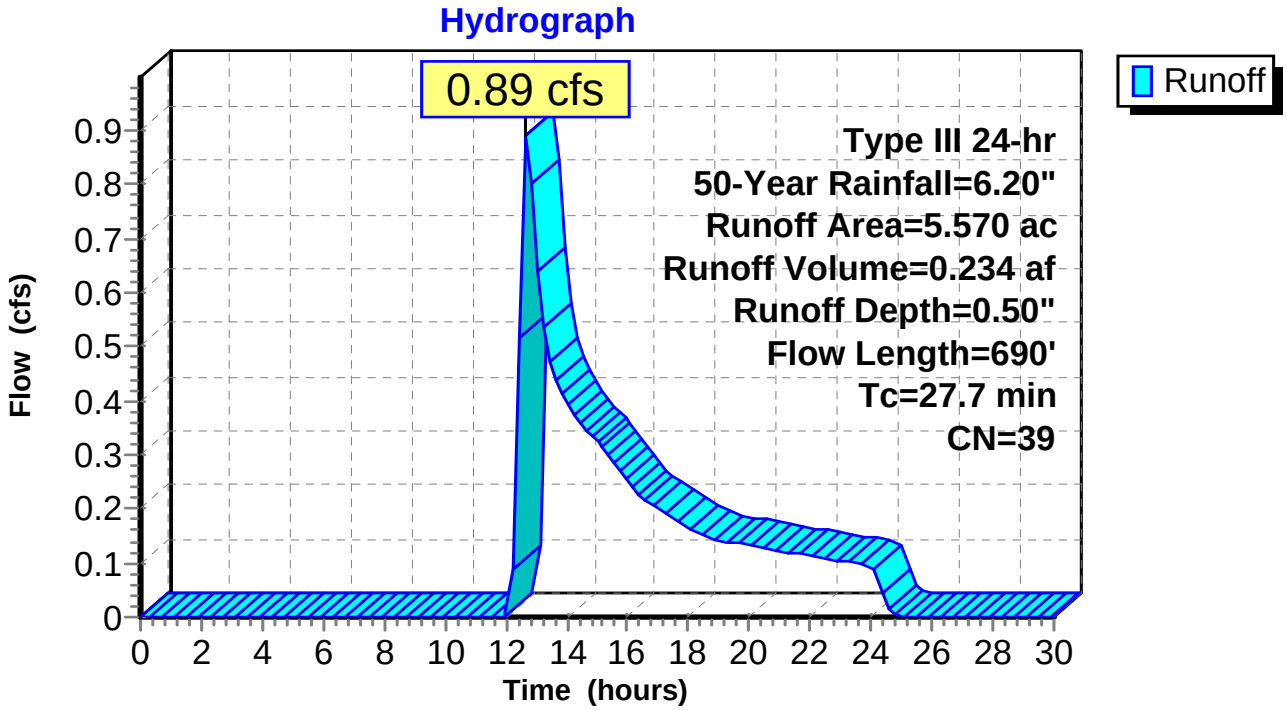
Runoff = 0.89 cfs @ 12.67 hrs, Volume= 0.234 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 50-Year Rainfall=6.20"

Area (ac)	CN	Description
5.570	39	Pasture/grassland/range, Good, HSG A
5.570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	150	0.0200	0.13		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
8.0	540	0.0260	1.13		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
27.7	690	Total			

Subcatchment PDA-1: PDA-1



Summary for Subcatchment PDA-2: PDA-2

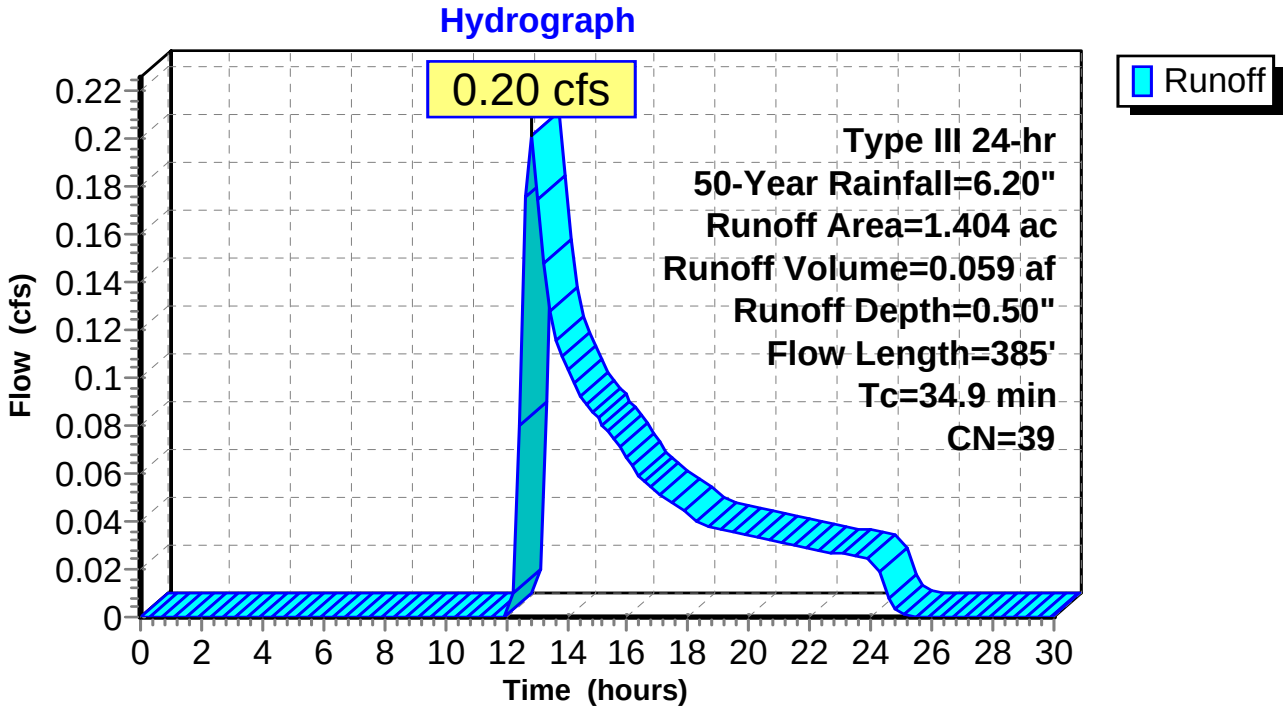
Runoff = 0.20 cfs @ 12.80 hrs, Volume= 0.059 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 50-Year Rainfall=6.20"

Area (ac)	CN	Description
1.404	39	Pasture/grassland/range, Good, HSG A
1.404		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.8	150	0.0066	0.08		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
4.1	235	0.0190	0.96		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
34.9	385	Total			

Subcatchment PDA-2: PDA-2



Summary for Subcatchment PDA-3: PDA-3

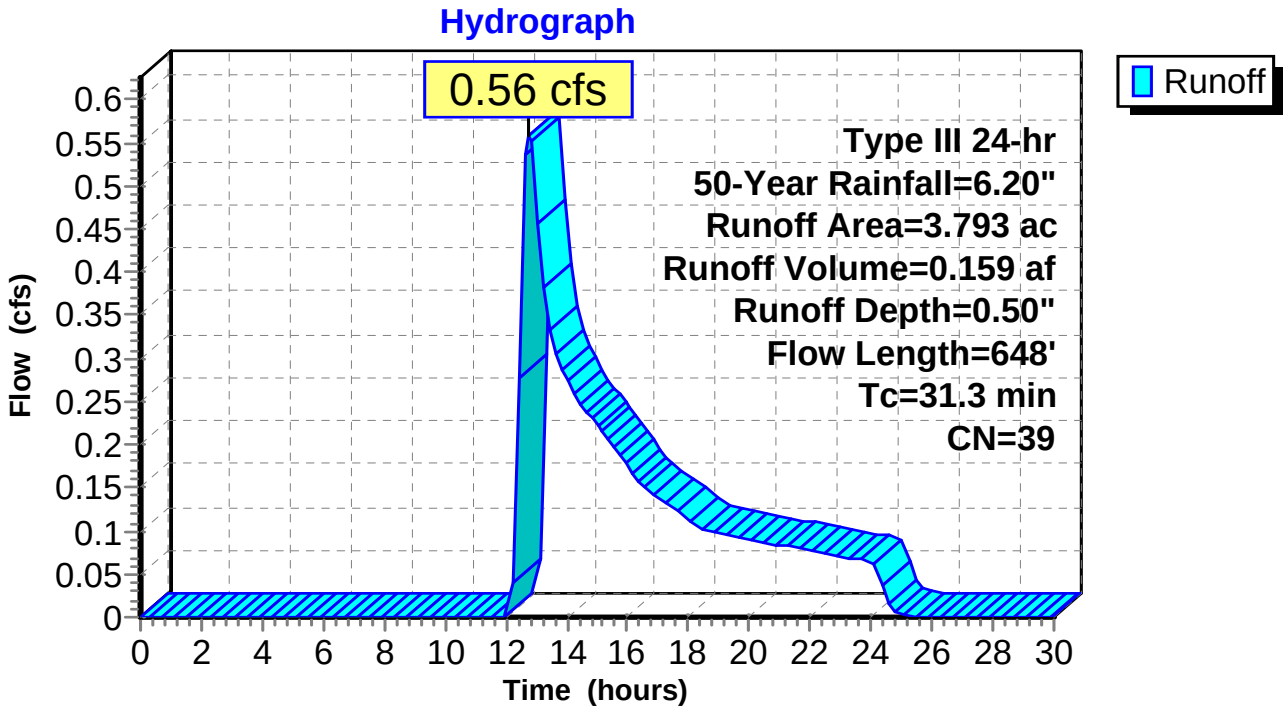
Runoff = 0.56 cfs @ 12.73 hrs, Volume= 0.159 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 50-Year Rainfall=6.20"

Area (ac)	CN	Description
3.793	39	Pasture/grassland/range, Good, HSG A
3.793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	100	0.1550	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
10.8	50	0.0100	0.08		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.20"
14.2	498	0.0070	0.59		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
31.3	648	Total			

Subcatchment PDA-3: PDA-3



Summary for Subcatchment PDA-4: PDA-4

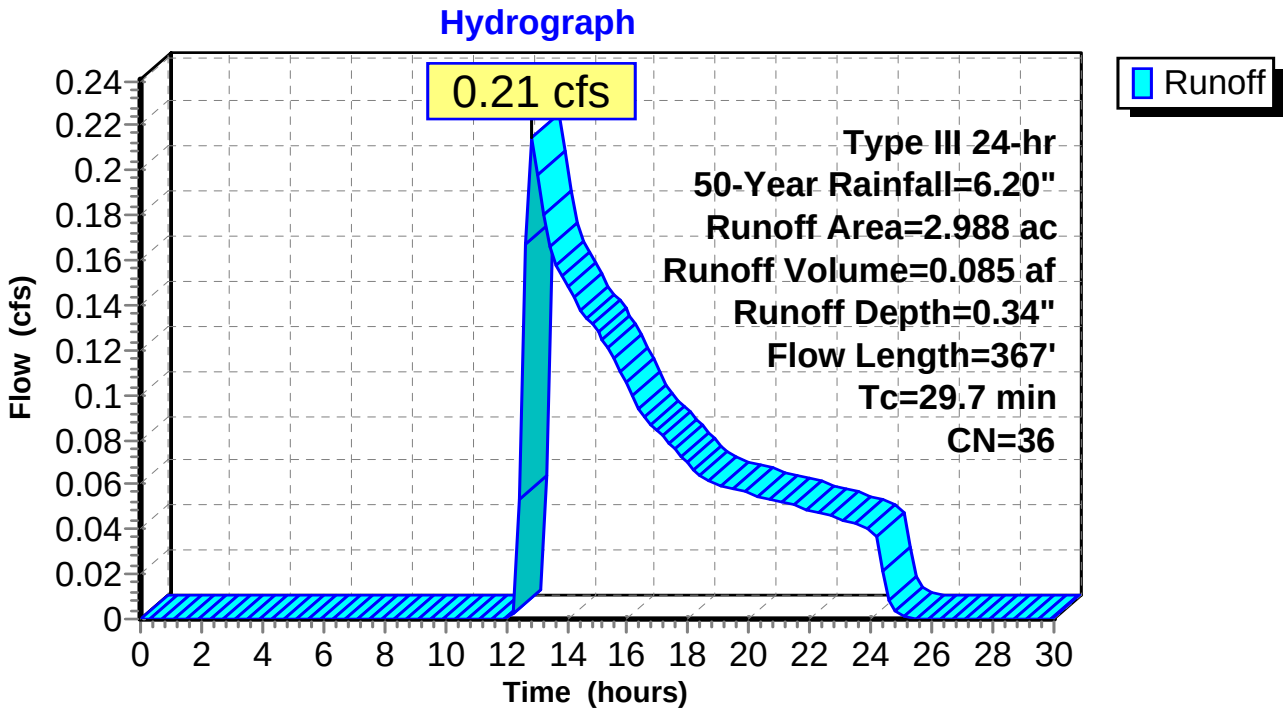
Runoff = 0.21 cfs @ 12.85 hrs, Volume= 0.085 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 50-Year Rainfall=6.20"

Area (ac)	CN	Description
2.080	39	Pasture/grassland/range, Good, HSG A
0.908	30	Woods, Good, HSG A
2.988	36	Weighted Average
2.988		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0100	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
3.5	187	0.0160	0.89		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.2	30	0.1660	2.04		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
29.7	367	Total			

Subcatchment PDA-4: PDA-4



Summary for Subcatchment PDA-5A: PDA-5A

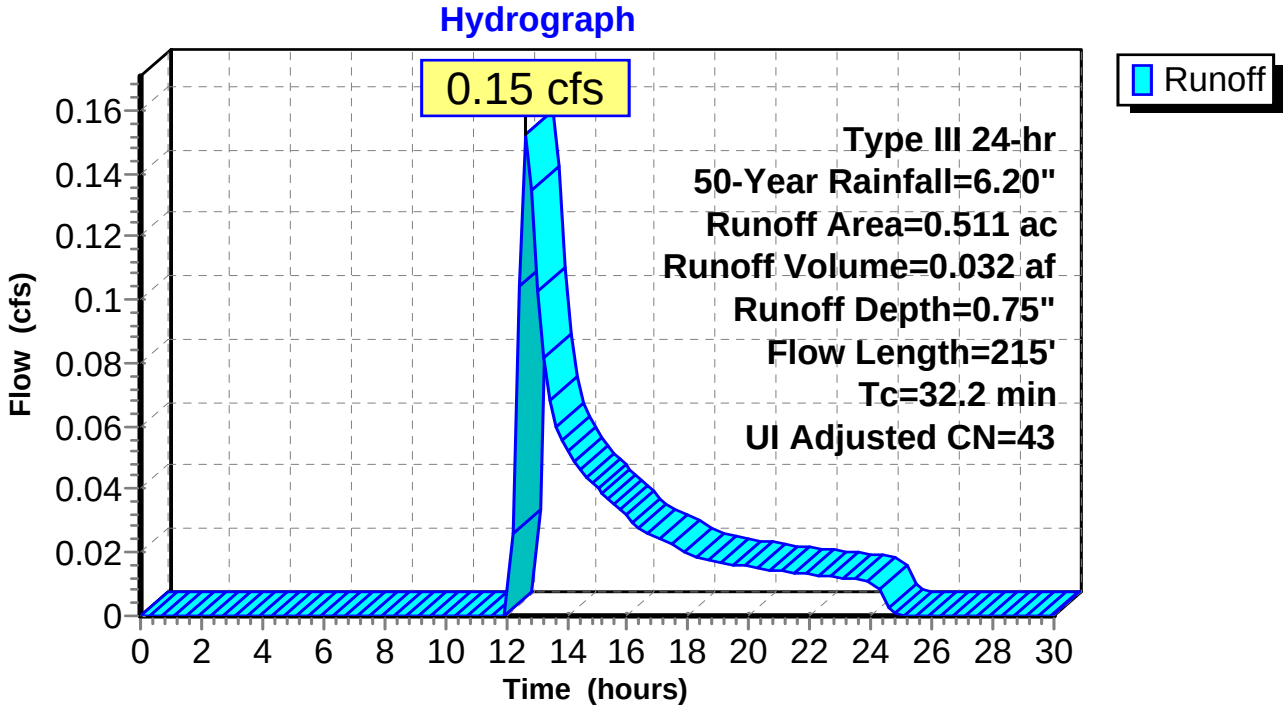
Runoff = 0.15 cfs @ 12.65 hrs, Volume= 0.032 af, Depth= 0.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 50-Year Rainfall=6.20"

Area (ac)	CN	Adj	Description
0.026	96		Gravel surface, HSG A
0.469	39		Pasture/grassland/range, Good, HSG A
0.007	98		Unconnected pavement, HSG A
0.009	98		Unconnected pavement, HSG A
0.511	44	43	Weighted Average, UI Adjusted
0.495			96.87% Pervious Area
0.016			3.13% Impervious Area
0.016			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.9	150	0.0060	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.3	65	0.0615	3.72		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.2	215	Total			

Subcatchment PDA-5A: PDA-5A



Summary for Subcatchment PDA-5B: PDA-5B

[49] Hint: Tc<2dt may require smaller dt

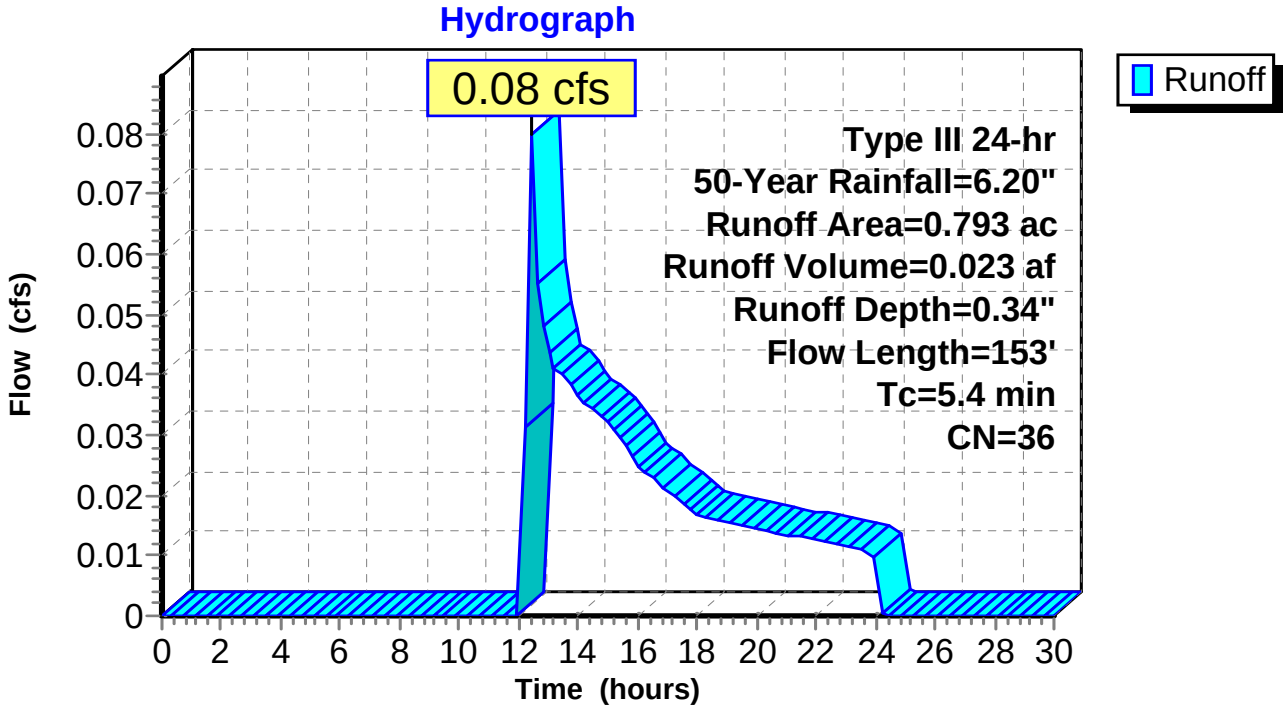
Runoff = 0.08 cfs @ 12.43 hrs, Volume= 0.023 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 50-Year Rainfall=6.20"

Area (ac)	CN	Description
0.211	39	Pasture/grassland/range, Good, HSG A
0.340	30	Woods, Good, HSG A
0.197	30	Woods, Good, HSG A
0.045	96	Gravel surface, HSG A
0.793	36	Weighted Average
0.793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	72	0.1700	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
0.7	81	0.0860	2.05		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
5.4	153	Total			

Subcatchment PDA-5B: PDA-5B



Summary for Subcatchment PDA-6: PDA-6

[49] Hint: Tc<2dt may require smaller dt

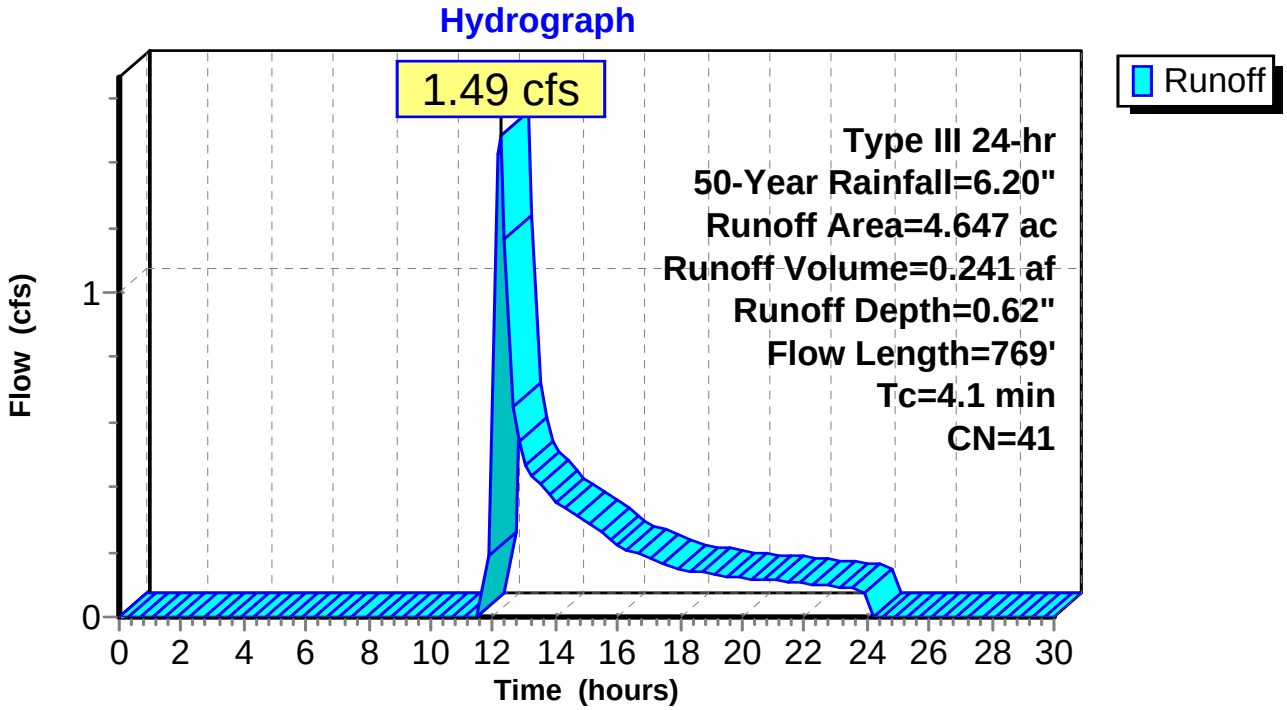
Runoff = 1.49 cfs @ 12.26 hrs, Volume= 0.241 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 50-Year Rainfall=6.20"

Area (ac)	CN	Description
0.292	98	Paved parking, HSG B
0.149	96	Gravel surface, HSG A
1.887	30	Woods, Good, HSG A
2.319	39	Pasture/grassland/range, Good, HSG A
4.647	41	Weighted Average
4.355		93.72% Pervious Area
0.292		6.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	150	0.0200	1.49		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.20"
0.7	149	0.0333	3.70		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.7	223	0.1430	5.67		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
1.0	247	0.0800	4.24		**Shallow Concentrated Flow, D-E** Grassed Waterway Kv= 15.0 fps
4.1	769	Total			

Subcatchment PDA-6: PDA-6



Summary for Pond 1P: Infiltration Basin

Inflow Area = 0.511 ac, 3.13% Impervious, Inflow Depth = 0.75" for 50-Year event
Inflow = 0.15 cfs @ 12.65 hrs, Volume= 0.032 af
Outflow = 0.01 cfs @ 24.39 hrs, Volume= 0.009 af, Atten= 96%, Lag= 704.5 min
Discarded = 0.01 cfs @ 24.39 hrs, Volume= 0.009 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 324.38' @ 24.39 hrs Surf.Area= 950 sf Storage= 1,116 cf

Plug-Flow detention time= 524.8 min calculated for 0.009 af (29% of inflow)
Center-of-Mass det. time= 338.6 min (1,287.0 - 948.4)

Volume	Invert	Avail.Storage	Storage Description
#1	323.00'	4,674 cf	**Custom Stage Data (Irregular)**Listed below

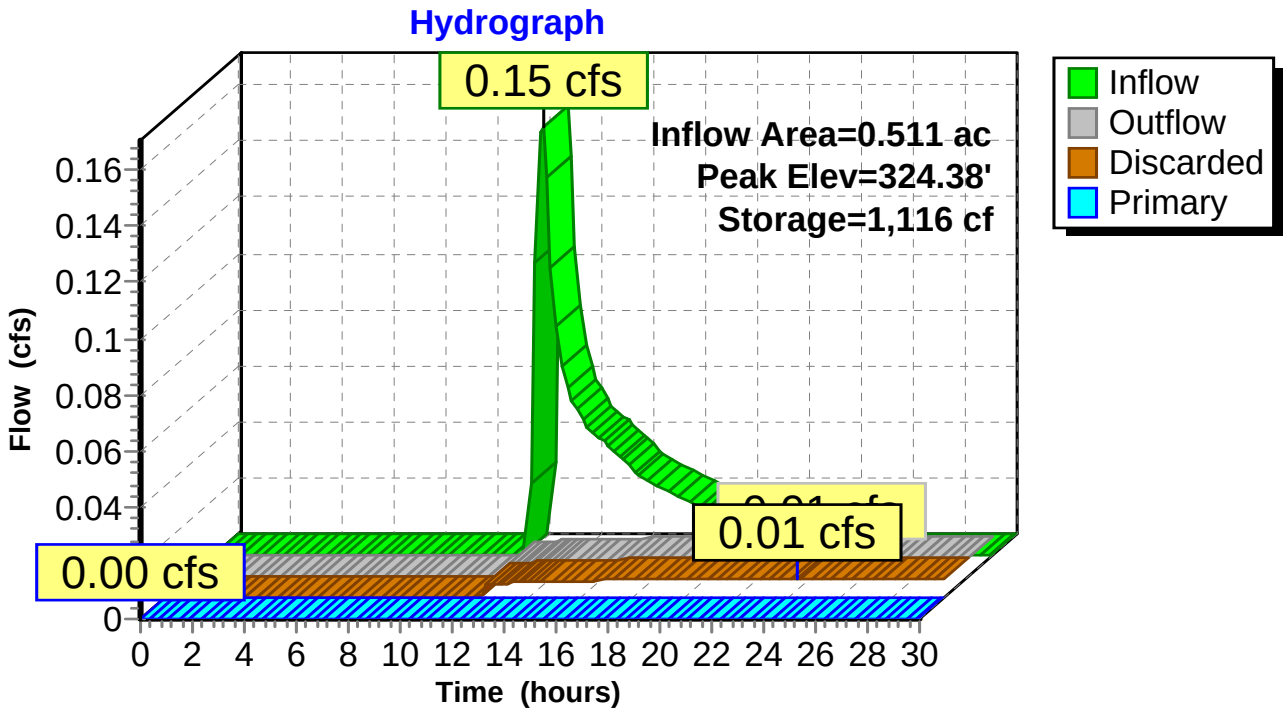
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
323.00	634	119.0	0	0	634
324.00	859	136.0	744	744	1,002
325.00	1,096	141.0	975	1,719	1,179
326.00	1,459	157.0	1,273	2,992	1,586
327.00	1,735	174.0	1,595	4,587	2,064
327.05	1,735	174.0	87	4,674	2,072

Device	Routing	Invert	Outlet Devices
#1	Primary	327.00'	**70.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	323.00'	**0.300 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.01 cfs @ 24.39 hrs HW=324.38' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=323.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Infiltration Basin

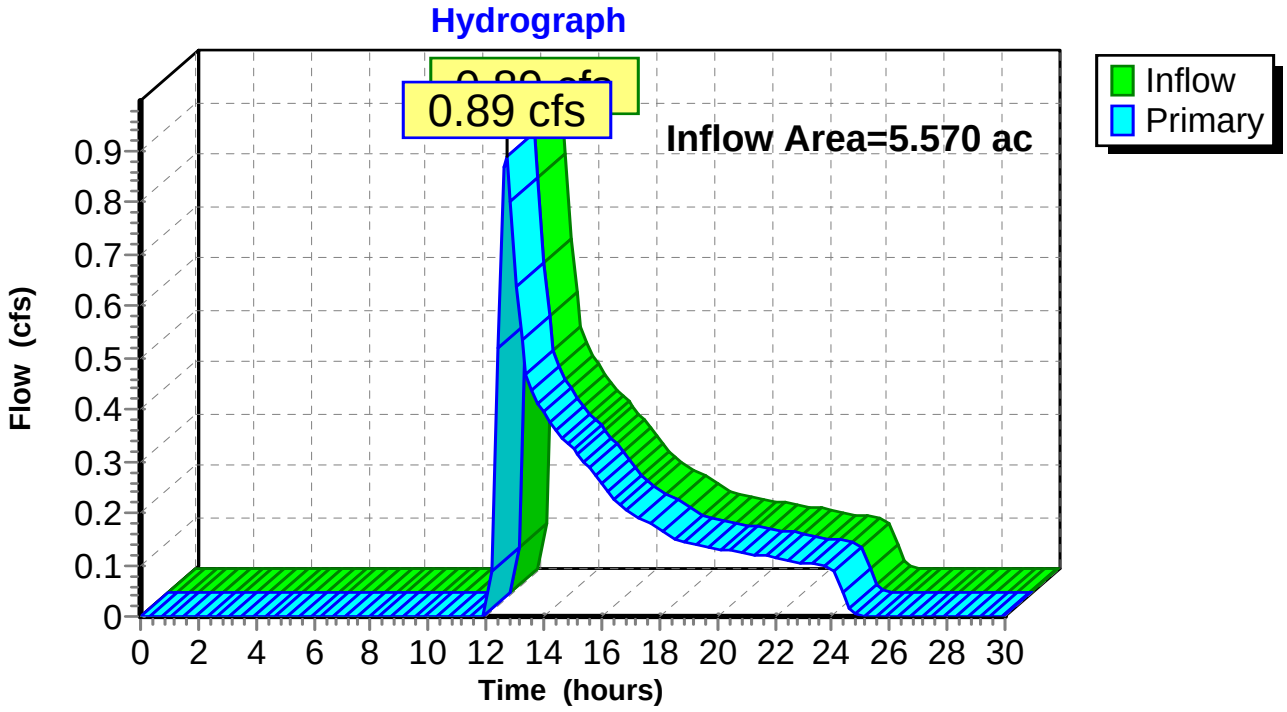


Summary for Link AP-1: AP-1

Inflow Area = 5.570 ac, 0.00% Impervious, Inflow Depth = 0.50" for 50-Year event
Inflow = 0.89 cfs @ 12.67 hrs, Volume= 0.234 af
Primary = 0.89 cfs @ 12.67 hrs, Volume= 0.234 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-1: AP-1

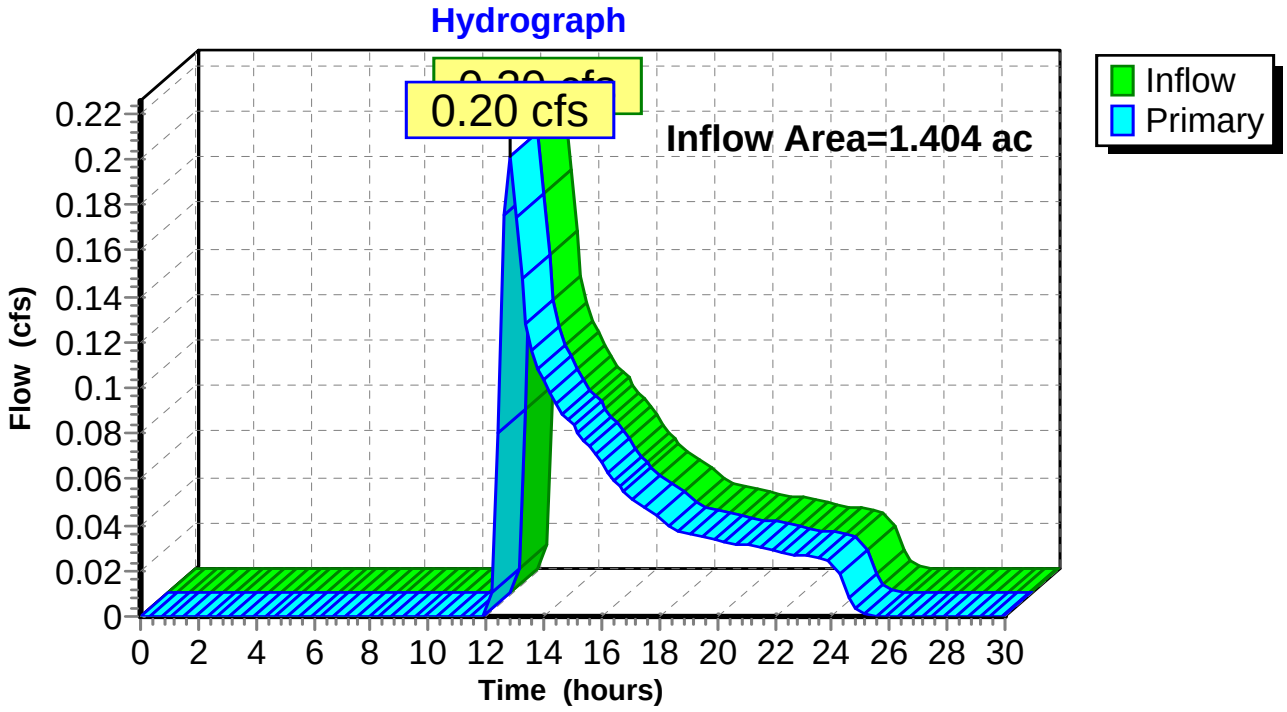


Summary for Link AP-2: AP-2

Inflow Area = 1.404 ac, 0.00% Impervious, Inflow Depth = 0.50" for 50-Year event
Inflow = 0.20 cfs @ 12.80 hrs, Volume= 0.059 af
Primary = 0.20 cfs @ 12.80 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-2: AP-2

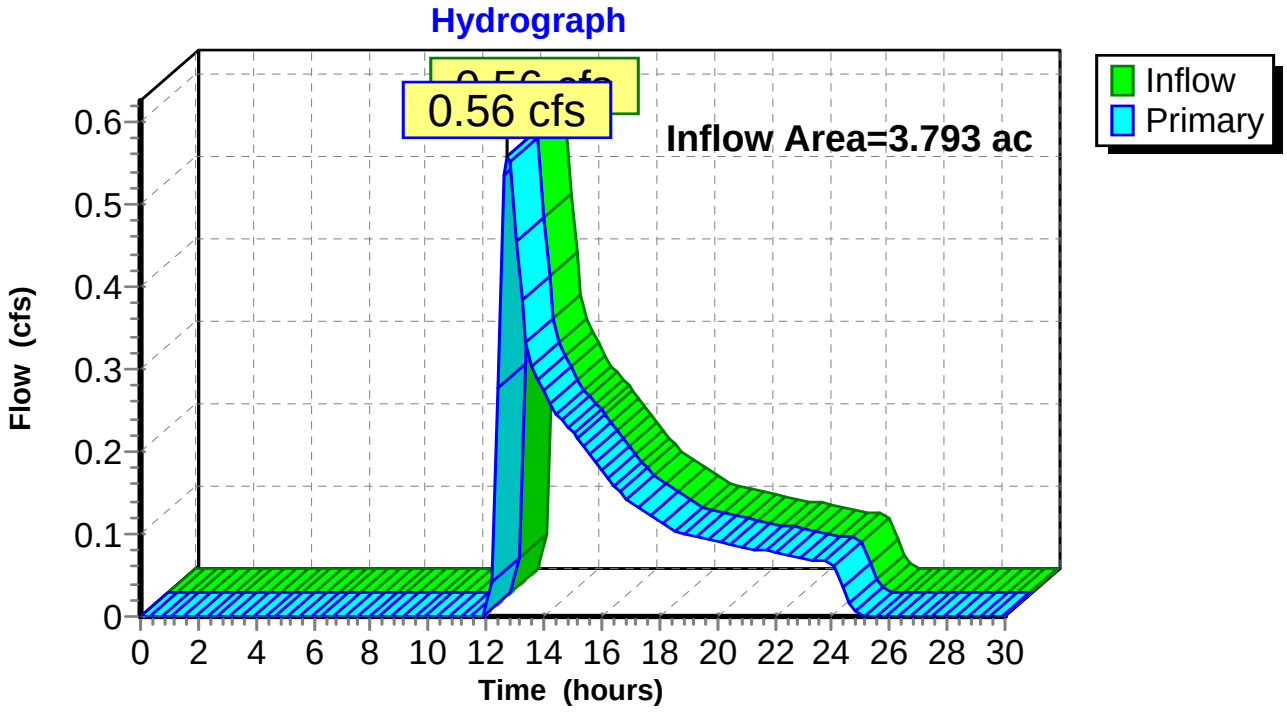


Summary for Link AP-3: AP-3

Inflow Area = 3.793 ac, 0.00% Impervious, Inflow Depth = 0.50" for 50-Year event
Inflow = 0.56 cfs @ 12.73 hrs, Volume= 0.159 af
Primary = 0.56 cfs @ 12.73 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-3: AP-3

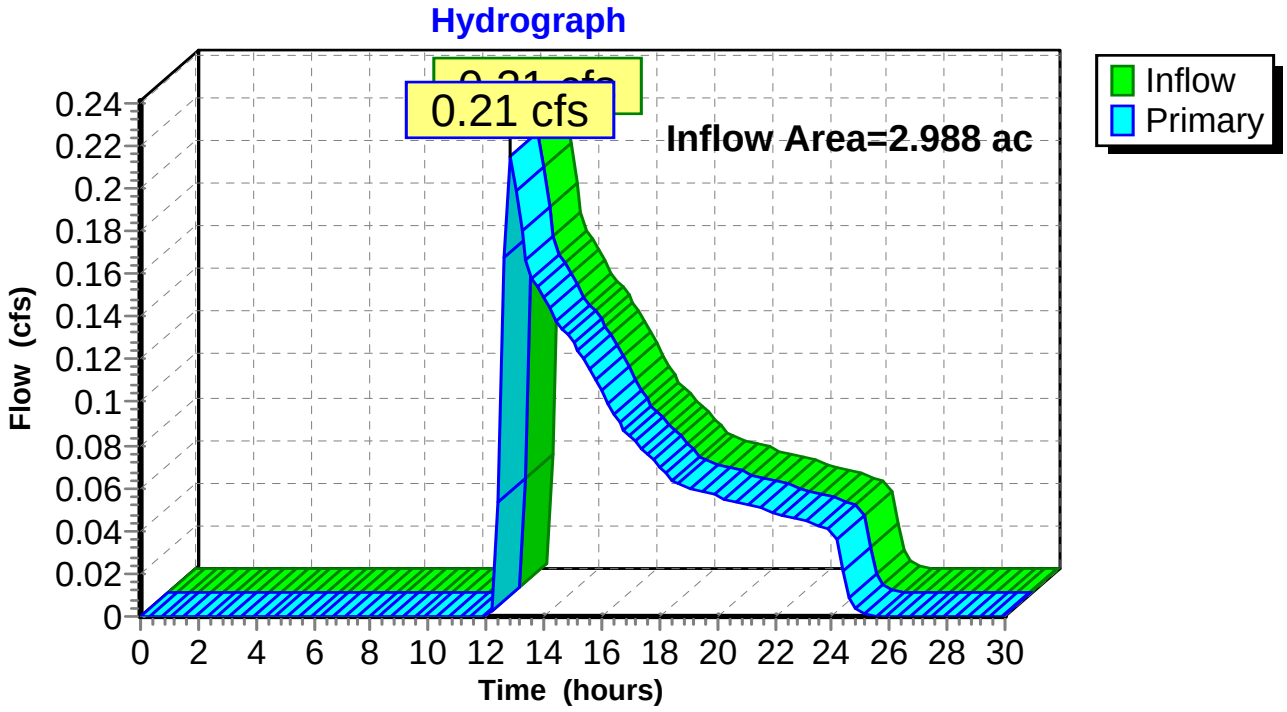


Summary for Link AP-4: AP-4

Inflow Area = 2.988 ac, 0.00% Impervious, Inflow Depth = 0.34" for 50-Year event
Inflow = 0.21 cfs @ 12.85 hrs, Volume= 0.085 af
Primary = 0.21 cfs @ 12.85 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-4: AP-4

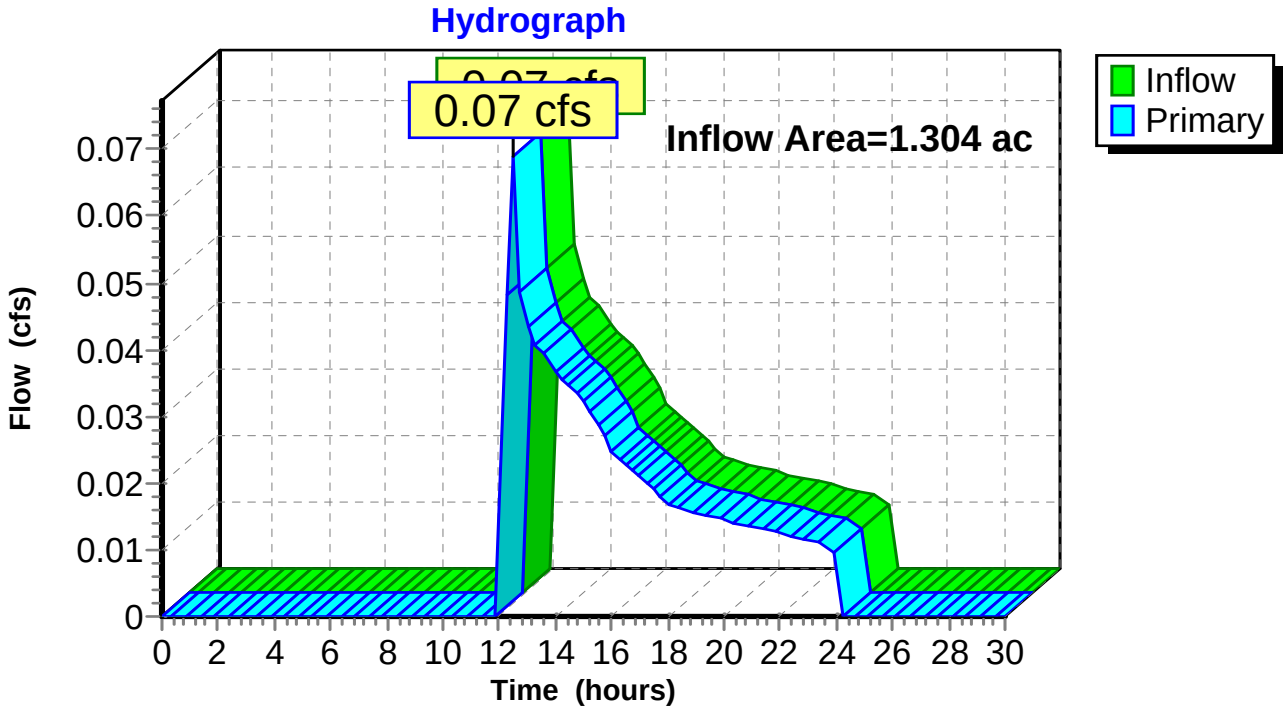


Summary for Link AP-5: AP-5

Inflow Area = 1.304 ac, 1.23% Impervious, Inflow Depth = 0.21" for 50-Year event
Inflow = 0.07 cfs @ 12.50 hrs, Volume= 0.023 af
Primary = 0.07 cfs @ 12.50 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-5: AP-5

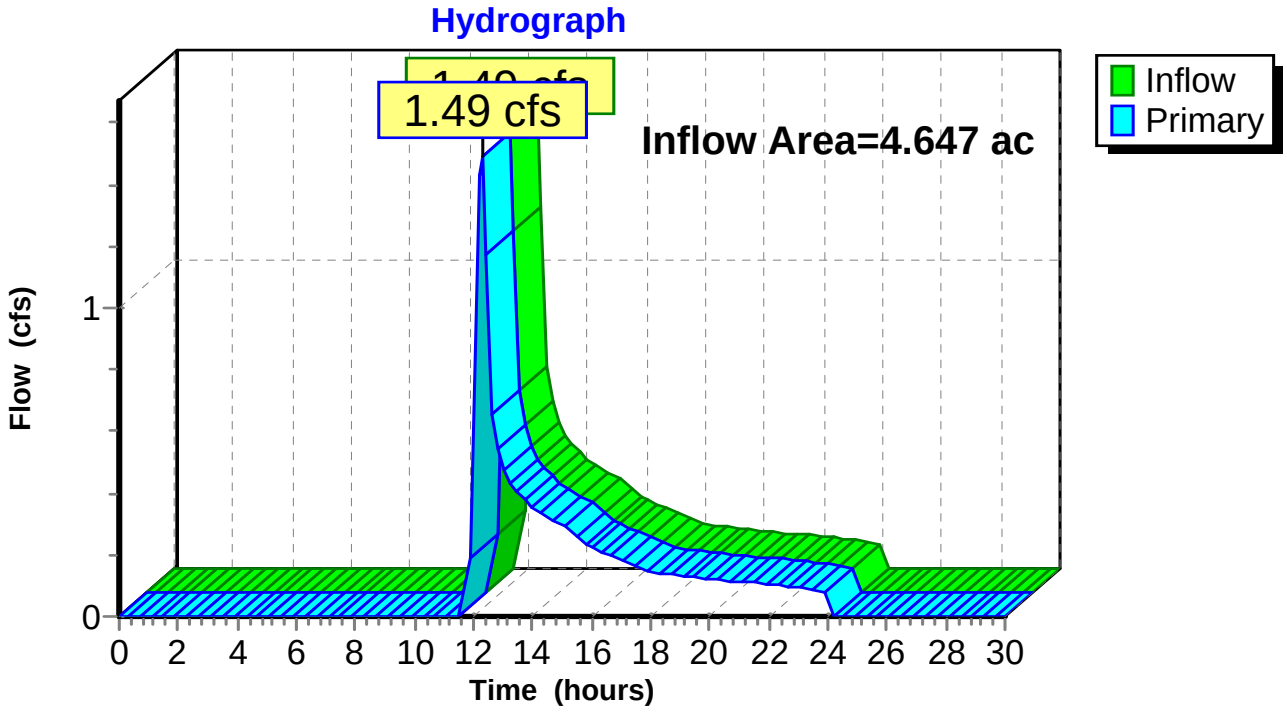


Summary for Link AP-6: AP-6

Inflow Area = 4.647 ac, 6.28% Impervious, Inflow Depth = 0.62" for 50-Year event
Inflow = 1.49 cfs @ 12.26 hrs, Volume= 0.241 af
Primary = 1.49 cfs @ 12.26 hrs, Volume= 0.241 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-6: AP-6

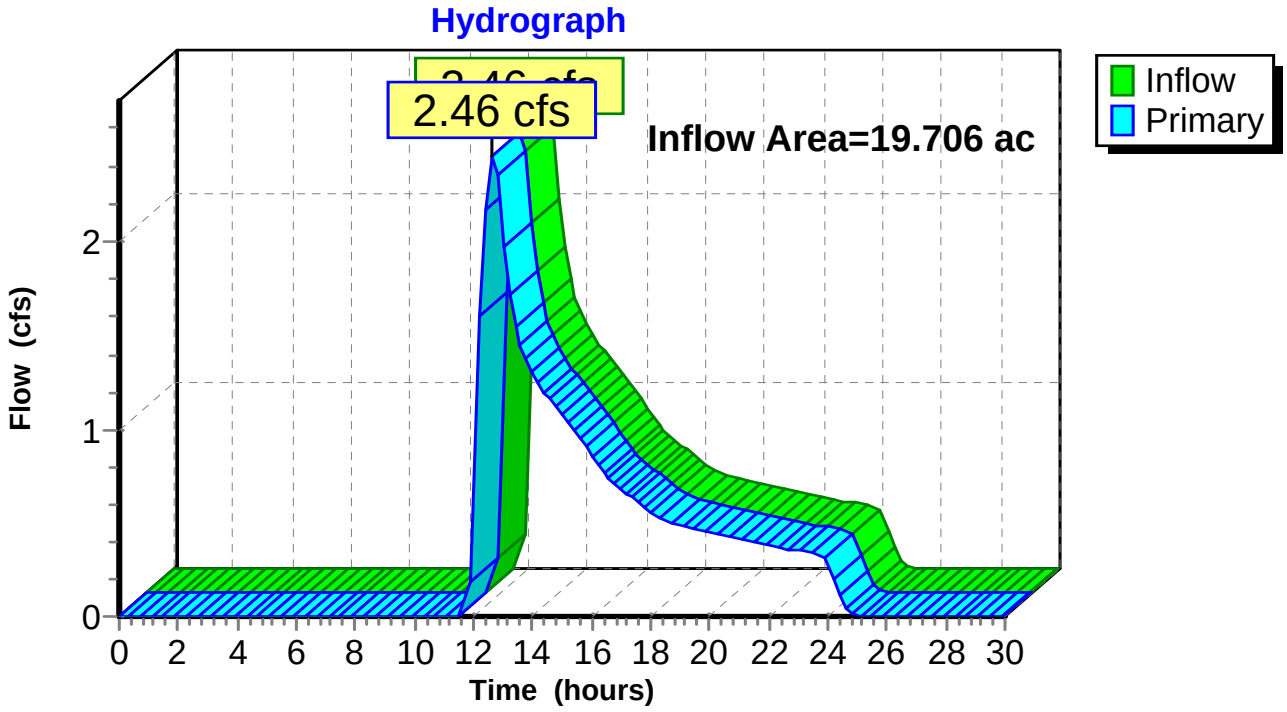


Summary for Link AP-FINAL: Quinnatisset Brook

Inflow Area = 19.706 ac, 1.56% Impervious, Inflow Depth = 0.49" for 50-Year event
Inflow = 2.46 cfs @ 12.65 hrs, Volume= 0.802 af
Primary = 2.46 cfs @ 12.65 hrs, Volume= 0.802 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-FINAL: Quinnatisset Brook



Summary for Subcatchment PDA-1: PDA-1

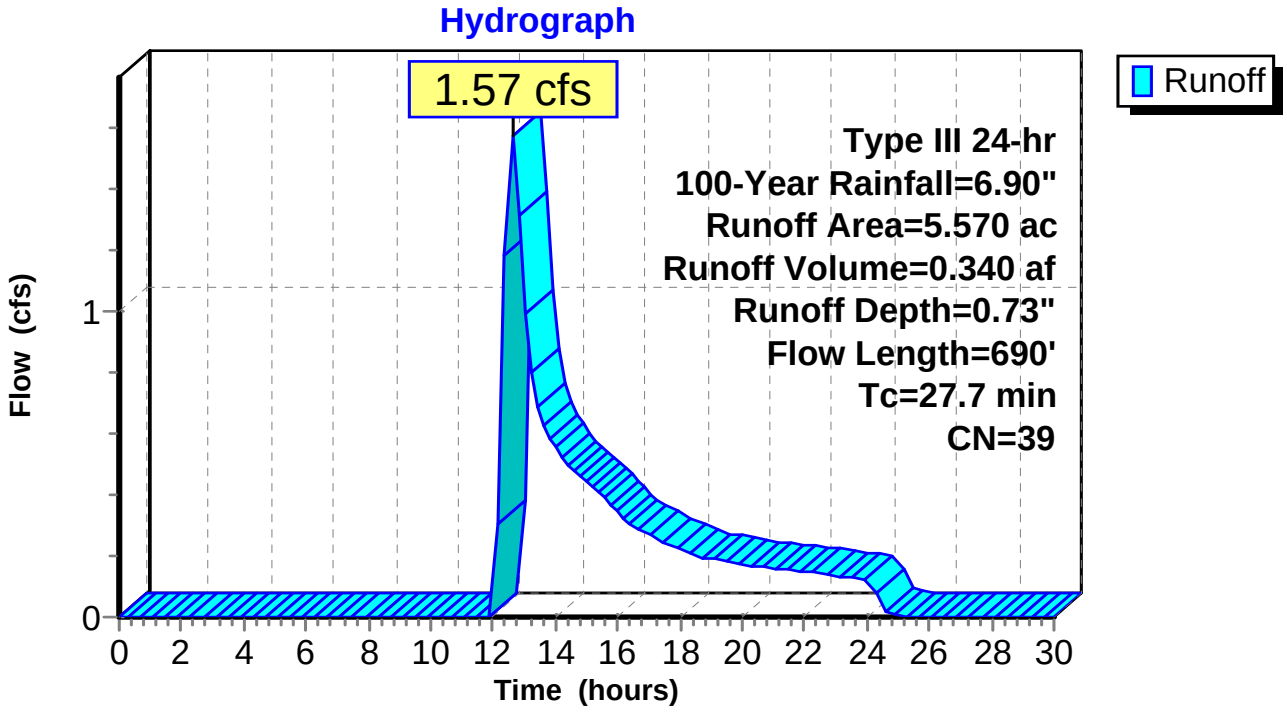
Runoff = 1.57 cfs @ 12.62 hrs, Volume= 0.340 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 100-Year Rainfall=6.90"

Area (ac)	CN	Description
5.570	39	Pasture/grassland/range, Good, HSG A
5.570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	150	0.0200	0.13		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
8.0	540	0.0260	1.13		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
27.7	690	Total			

Subcatchment PDA-1: PDA-1



Summary for Subcatchment PDA-2: PDA-2

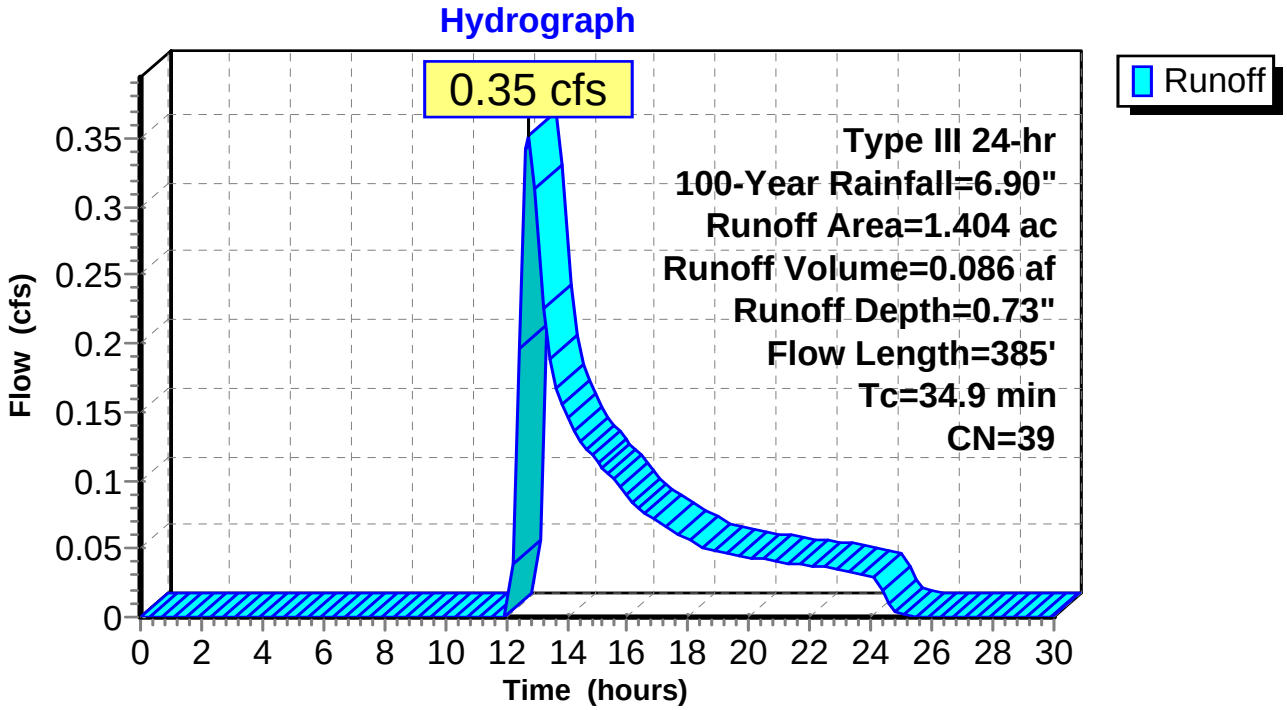
Runoff = 0.35 cfs @ 12.71 hrs, Volume= 0.086 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 100-Year Rainfall=6.90"

Area (ac)	CN	Description
1.404	39	Pasture/grassland/range, Good, HSG A
1.404		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.8	150	0.0066	0.08		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
4.1	235	0.0190	0.96		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
34.9	385	Total			

Subcatchment PDA-2: PDA-2



Summary for Subcatchment PDA-3: PDA-3

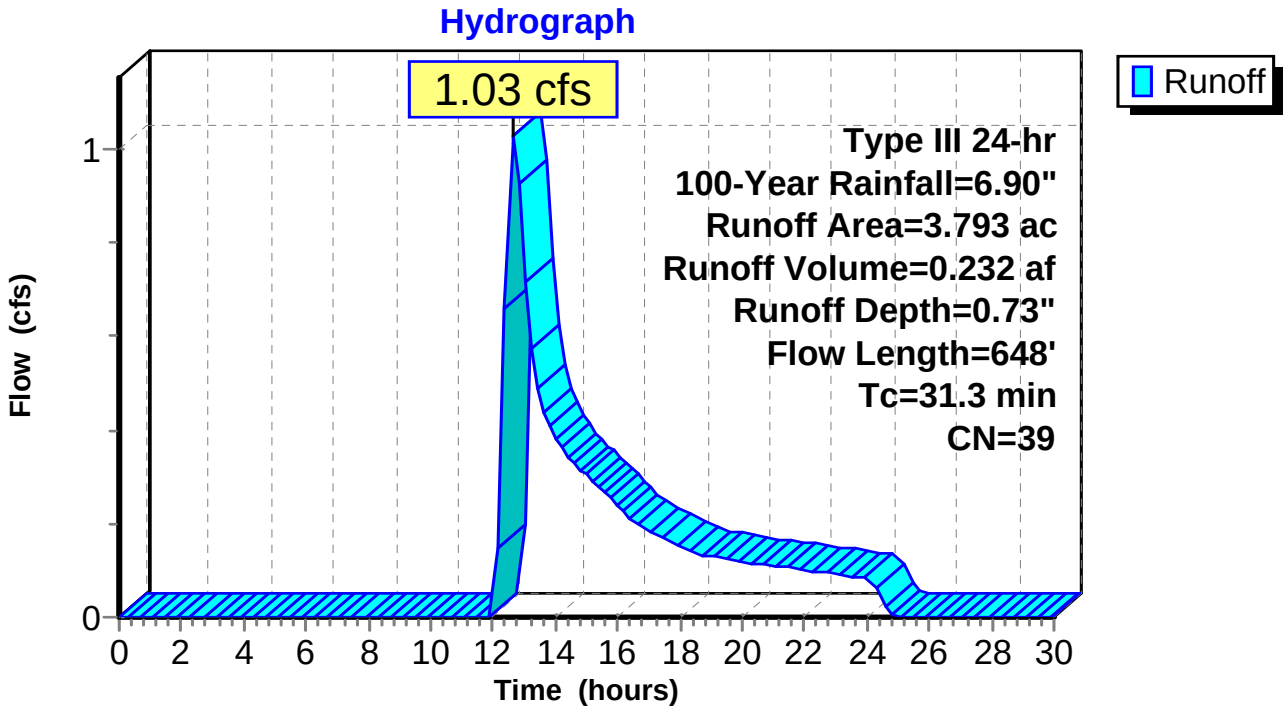
Runoff = 1.03 cfs @ 12.66 hrs, Volume= 0.232 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 100-Year Rainfall=6.90"

Area (ac)	CN	Description
3.793	39	Pasture/grassland/range, Good, HSG A
3.793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	100	0.1550	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
10.8	50	0.0100	0.08		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.20"
14.2	498	0.0070	0.59		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
31.3	648	Total			

Subcatchment PDA-3: PDA-3



Summary for Subcatchment PDA-4: PDA-4

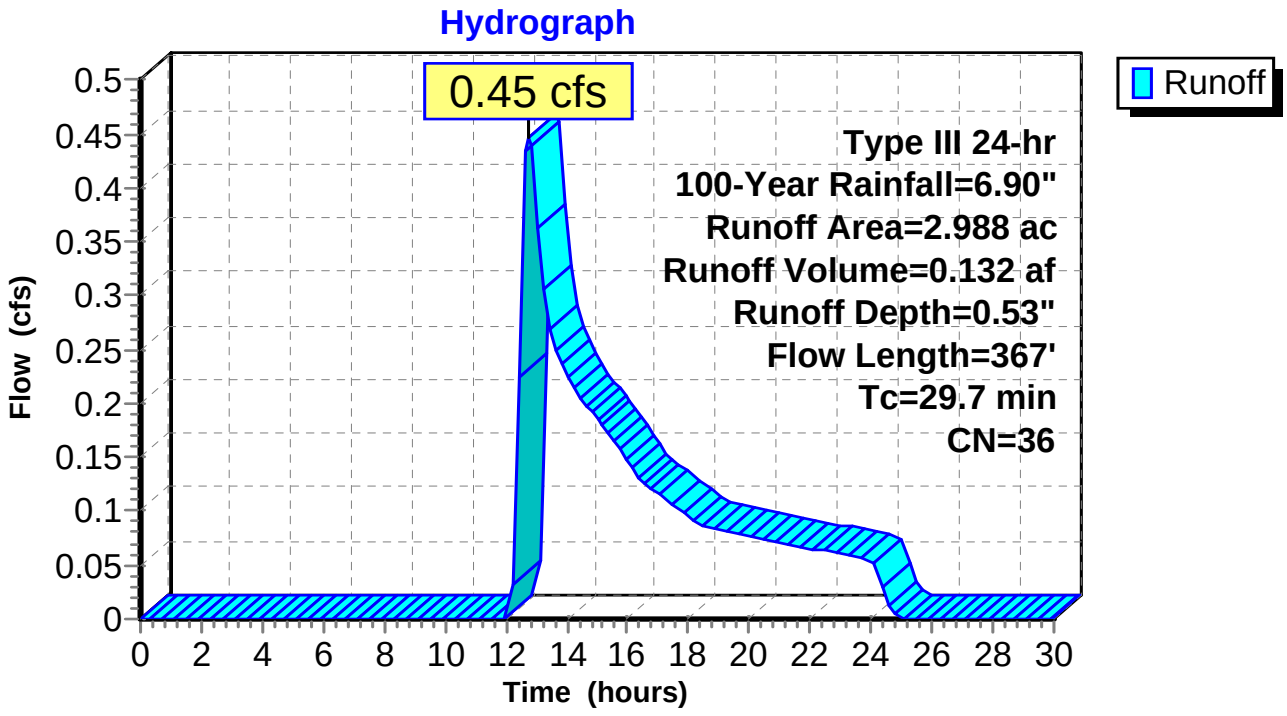
Runoff = 0.45 cfs @ 12.71 hrs, Volume= 0.132 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 100-Year Rainfall=6.90"

Area (ac)	CN	Description
2.080	39	Pasture/grassland/range, Good, HSG A
0.908	30	Woods, Good, HSG A
2.988	36	Weighted Average
2.988		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0100	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
3.5	187	0.0160	0.89		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.2	30	0.1660	2.04		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
29.7	367	Total			

Subcatchment PDA-4: PDA-4



Summary for Subcatchment PDA-5A: PDA-5A

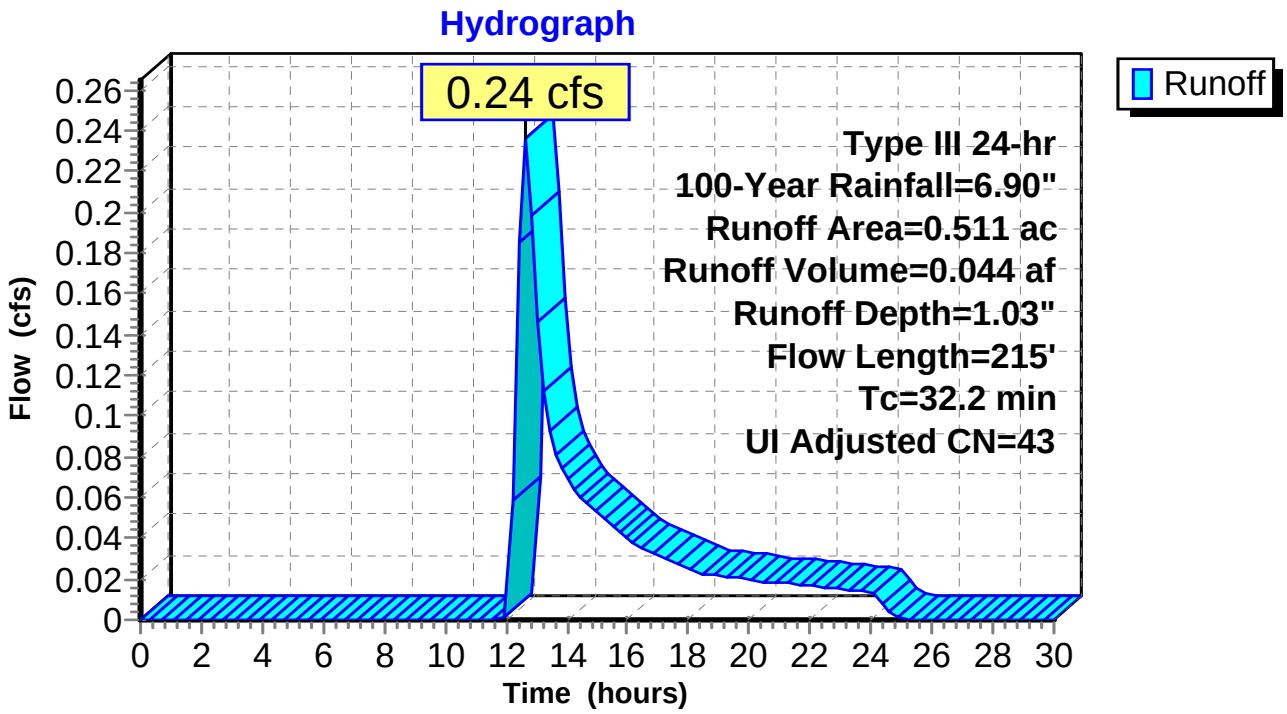
Runoff = 0.24 cfs @ 12.61 hrs, Volume= 0.044 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 100-Year Rainfall=6.90"

Area (ac)	CN	Adj	Description
0.026	96		Gravel surface, HSG A
0.469	39		Pasture/grassland/range, Good, HSG A
0.007	98		Unconnected pavement, HSG A
0.009	98		Unconnected pavement, HSG A
0.511	44	43	Weighted Average, UI Adjusted
0.495			96.87% Pervious Area
0.016			3.13% Impervious Area
0.016			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.9	150	0.0060	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.3	65	0.0615	3.72		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.2	215	Total			

Subcatchment PDA-5A: PDA-5A



Summary for Subcatchment PDA-5B: PDA-5B

[49] Hint: Tc<2dt may require smaller dt

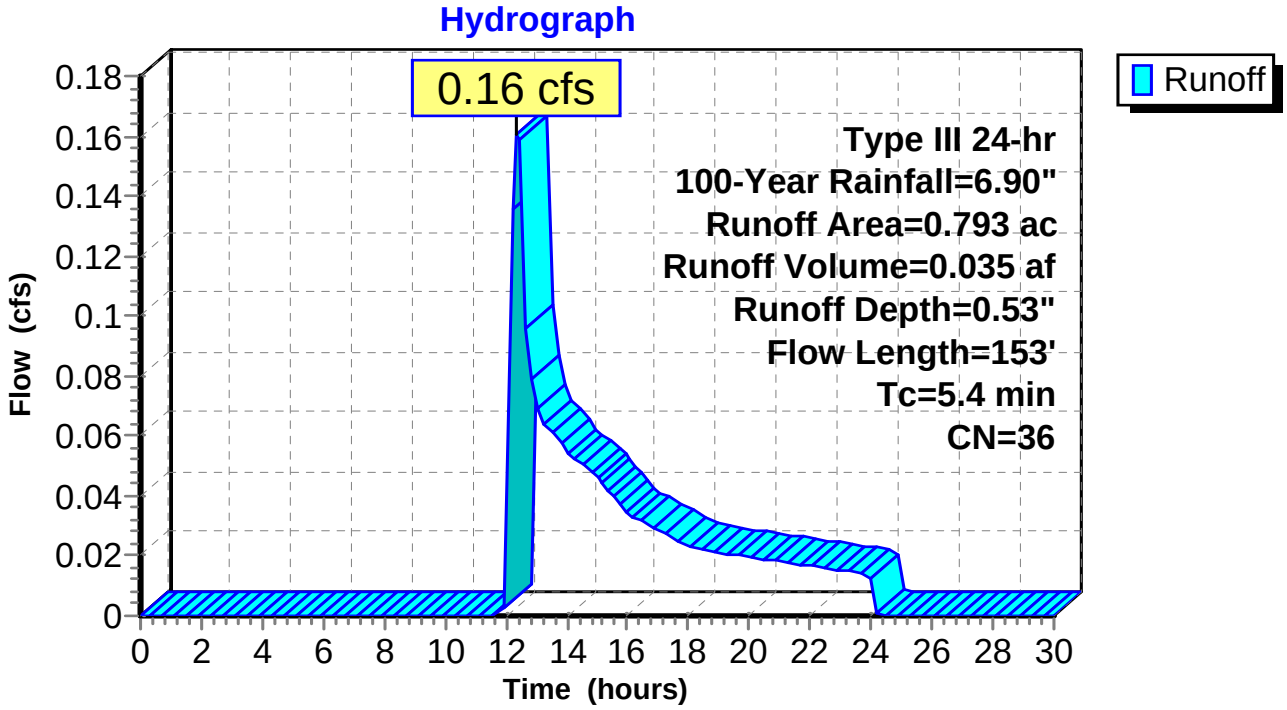
Runoff = 0.16 cfs @ 12.35 hrs, Volume= 0.035 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 100-Year Rainfall=6.90"

Area (ac)	CN	Description
0.211	39	Pasture/grassland/range, Good, HSG A
0.340	30	Woods, Good, HSG A
0.197	30	Woods, Good, HSG A
0.045	96	Gravel surface, HSG A
0.793	36	Weighted Average
0.793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	72	0.1700	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.20"
0.7	81	0.0860	2.05		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
5.4	153	Total			

Subcatchment PDA-5B: PDA-5B



Summary for Subcatchment PDA-6: PDA-6

[49] Hint: Tc<2dt may require smaller dt

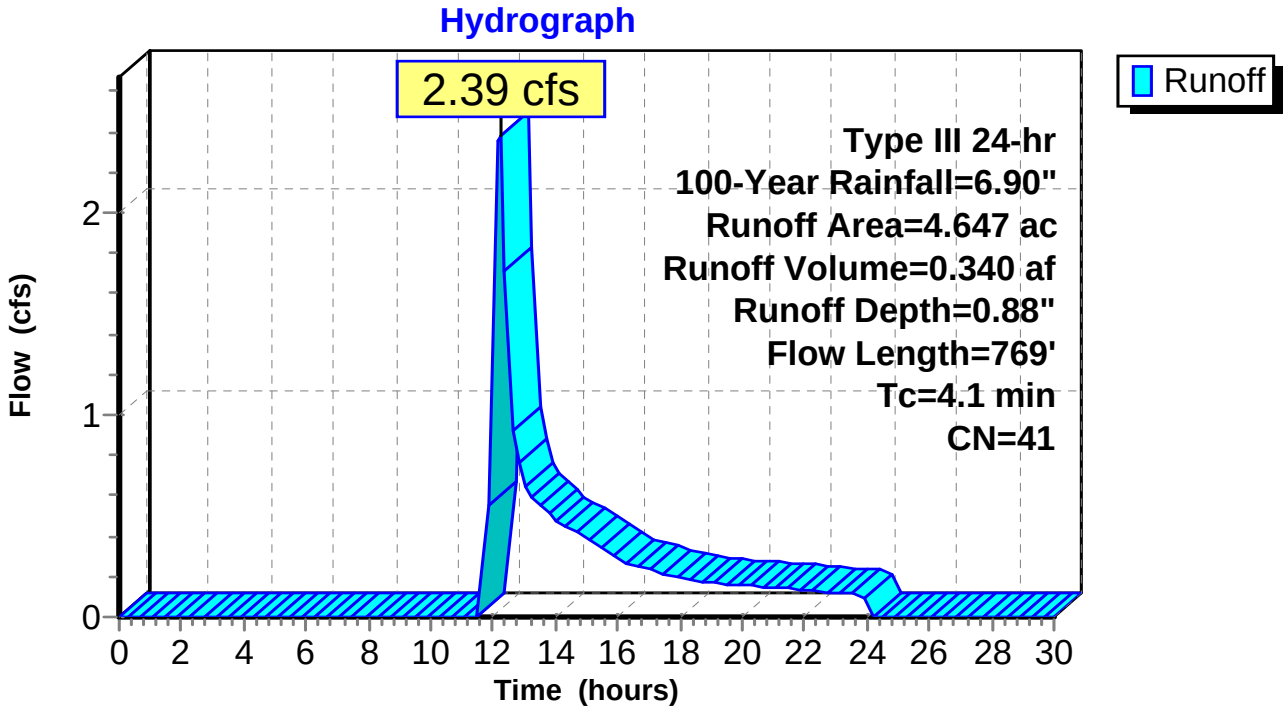
Runoff = 2.39 cfs @ 12.23 hrs, Volume= 0.340 af, Depth= 0.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 100-Year Rainfall=6.90"

Area (ac)	CN	Description
0.292	98	Paved parking, HSG B
0.149	96	Gravel surface, HSG A
1.887	30	Woods, Good, HSG A
2.319	39	Pasture/grassland/range, Good, HSG A
4.647	41	Weighted Average
4.355		93.72% Pervious Area
0.292		6.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	150	0.0200	1.49		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.20"
0.7	149	0.0333	3.70		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.7	223	0.1430	5.67		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
1.0	247	0.0800	4.24		**Shallow Concentrated Flow, D-E** Grassed Waterway Kv= 15.0 fps
4.1	769	Total			

Subcatchment PDA-6: PDA-6



Summary for Pond 1P: Infiltration Basin

Inflow Area = 0.511 ac, 3.13% Impervious, Inflow Depth = 1.03" for 100-Year event
Inflow = 0.24 cfs @ 12.61 hrs, Volume= 0.044 af
Outflow = 0.01 cfs @ 24.43 hrs, Volume= 0.010 af, Atten= 97%, Lag= 708.9 min
Discarded = 0.01 cfs @ 24.43 hrs, Volume= 0.010 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 324.89' @ 24.43 hrs Surf.Area= 1,069 sf Storage= 1,607 cf

Plug-Flow detention time= 532.7 min calculated for 0.010 af (23% of inflow)
Center-of-Mass det. time= 354.3 min (1,288.5 - 934.2)

Volume	Invert	Avail.Storage	Storage Description
#1	323.00'	4,674 cf	**Custom Stage Data (Irregular)**Listed below

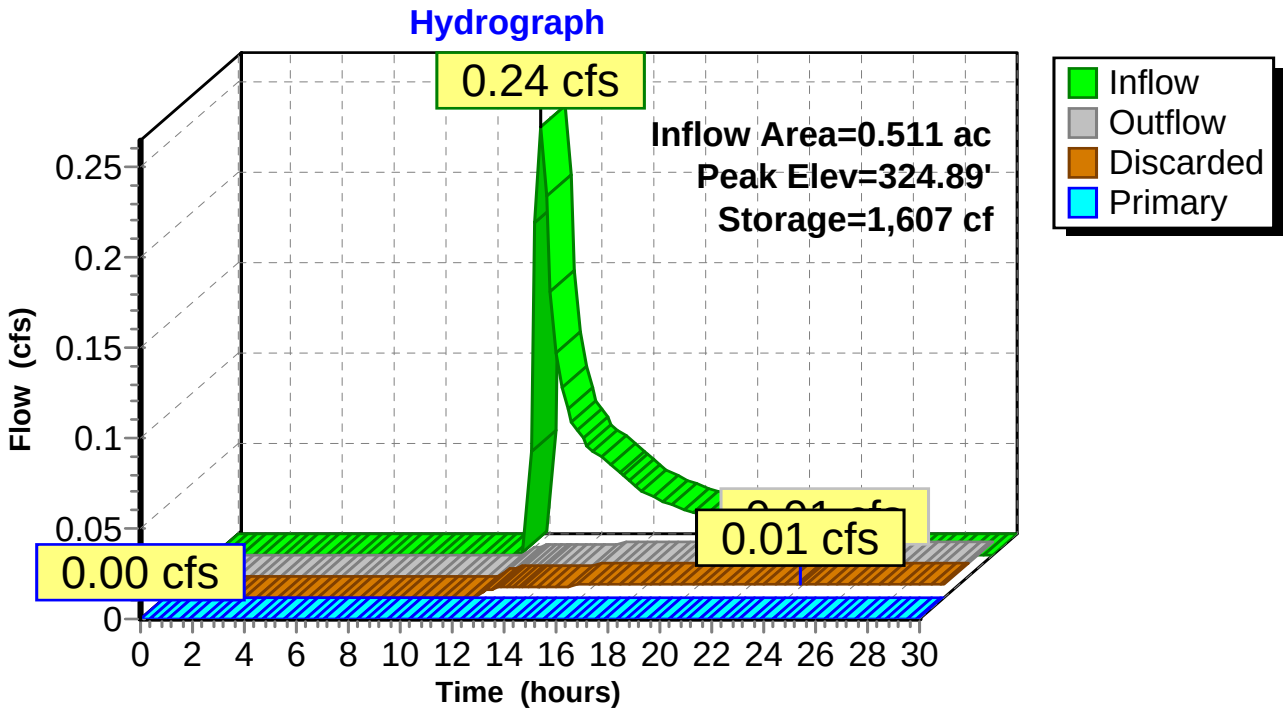
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
323.00	634	119.0	0	0	634
324.00	859	136.0	744	744	1,002
325.00	1,096	141.0	975	1,719	1,179
326.00	1,459	157.0	1,273	2,992	1,586
327.00	1,735	174.0	1,595	4,587	2,064
327.05	1,735	174.0	87	4,674	2,072

Device	Routing	Invert	Outlet Devices
#1	Primary	327.00'	**70.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	323.00'	**0.300 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.01 cfs @ 24.43 hrs HW=324.88' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=323.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Infiltration Basin

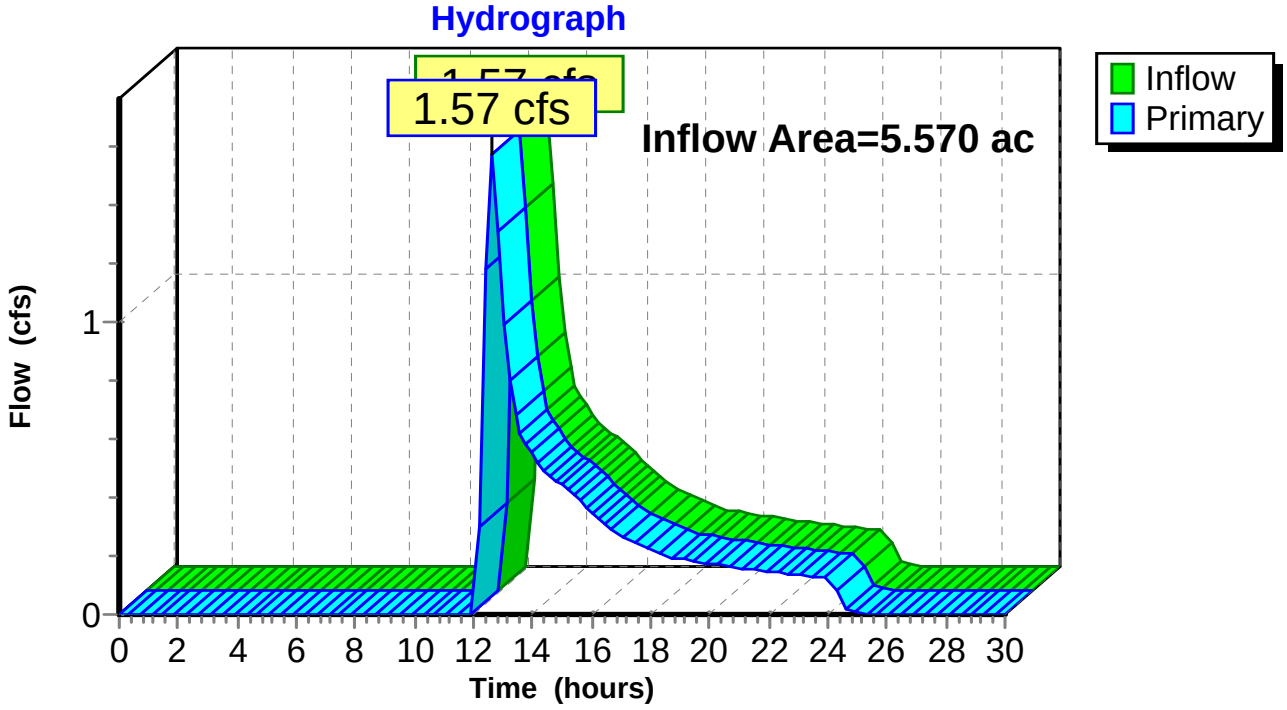


Summary for Link AP-1: AP-1

Inflow Area = 5.570 ac, 0.00% Impervious, Inflow Depth = 0.73" for 100-Year event
Inflow = 1.57 cfs @ 12.62 hrs, Volume= 0.340 af
Primary = 1.57 cfs @ 12.62 hrs, Volume= 0.340 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-1: AP-1

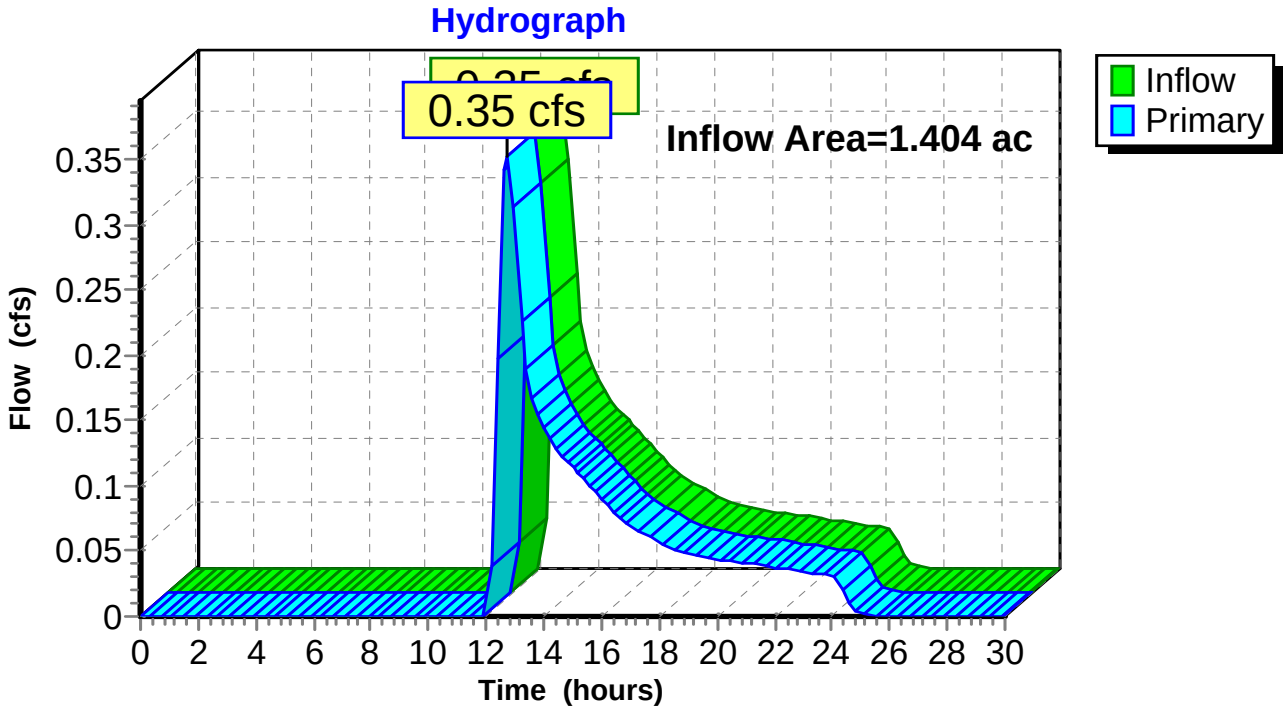


Summary for Link AP-2: AP-2

Inflow Area = 1.404 ac, 0.00% Impervious, Inflow Depth = 0.73" for 100-Year event
Inflow = 0.35 cfs @ 12.71 hrs, Volume= 0.086 af
Primary = 0.35 cfs @ 12.71 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-2: AP-2

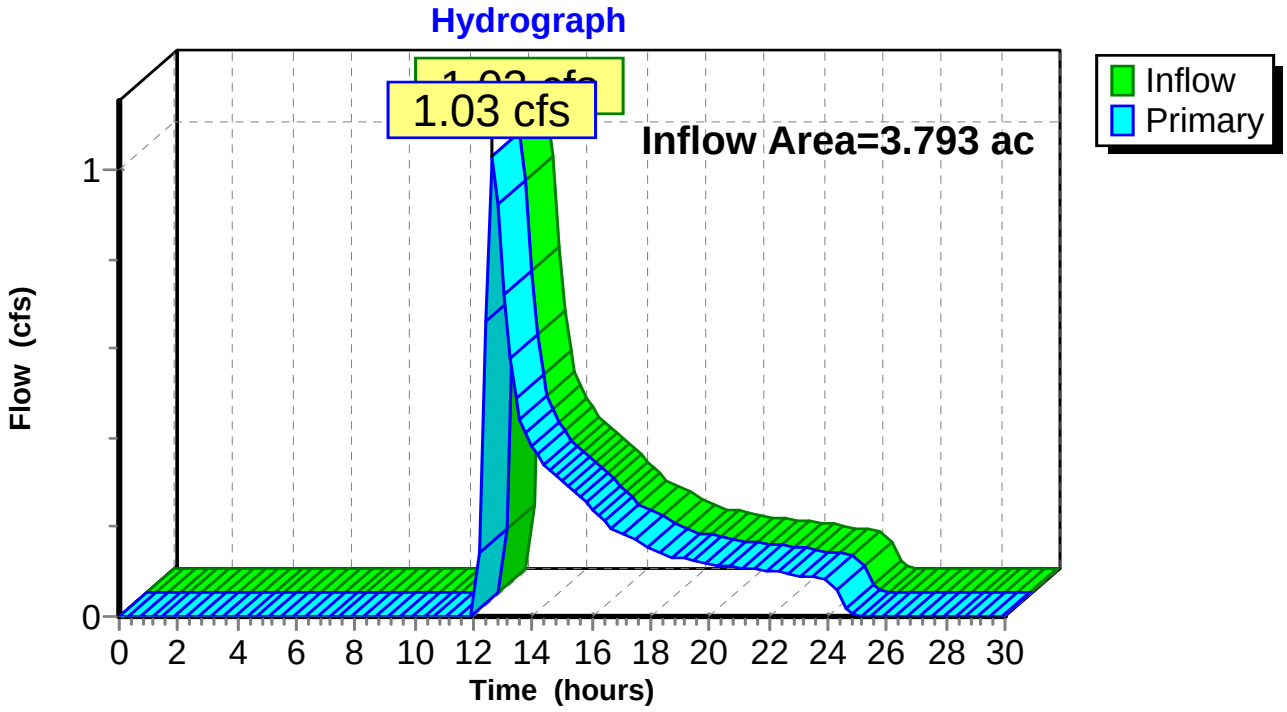


Summary for Link AP-3: AP-3

Inflow Area = 3.793 ac, 0.00% Impervious, Inflow Depth = 0.73" for 100-Year event
Inflow = 1.03 cfs @ 12.66 hrs, Volume= 0.232 af
Primary = 1.03 cfs @ 12.66 hrs, Volume= 0.232 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-3: AP-3

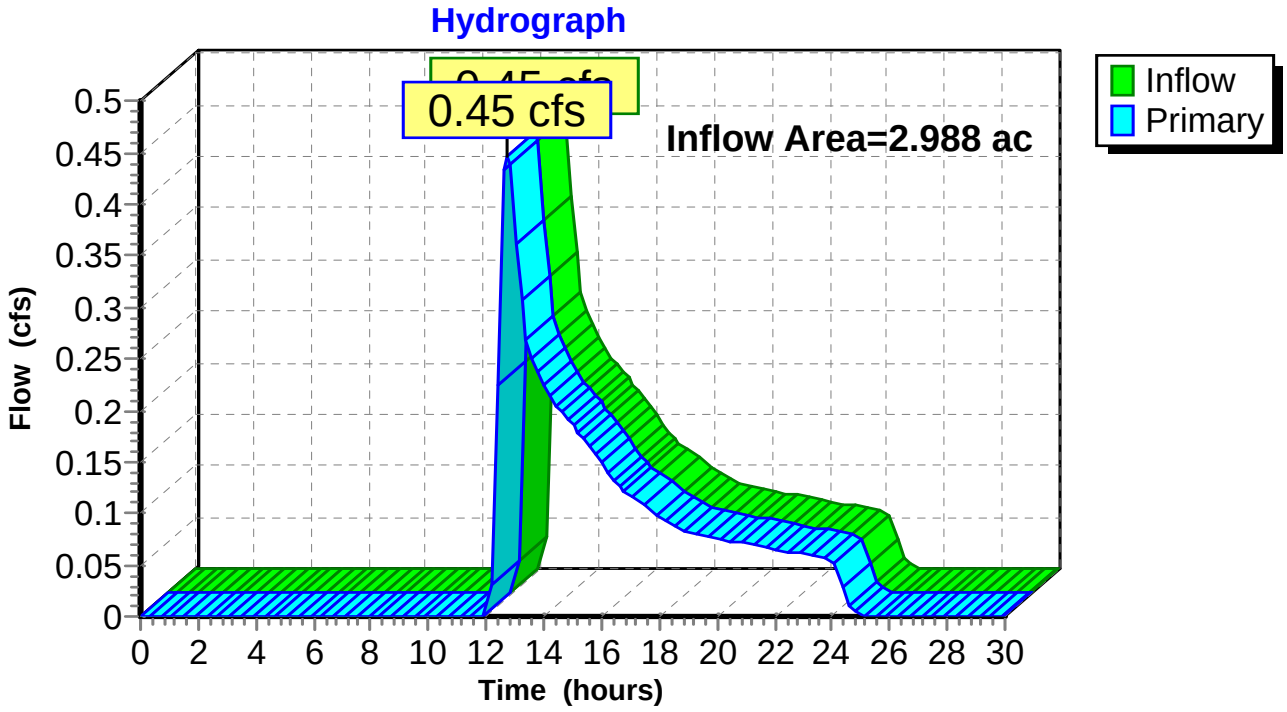


Summary for Link AP-4: AP-4

Inflow Area = 2.988 ac, 0.00% Impervious, Inflow Depth = 0.53" for 100-Year event
Inflow = 0.45 cfs @ 12.71 hrs, Volume= 0.132 af
Primary = 0.45 cfs @ 12.71 hrs, Volume= 0.132 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-4: AP-4

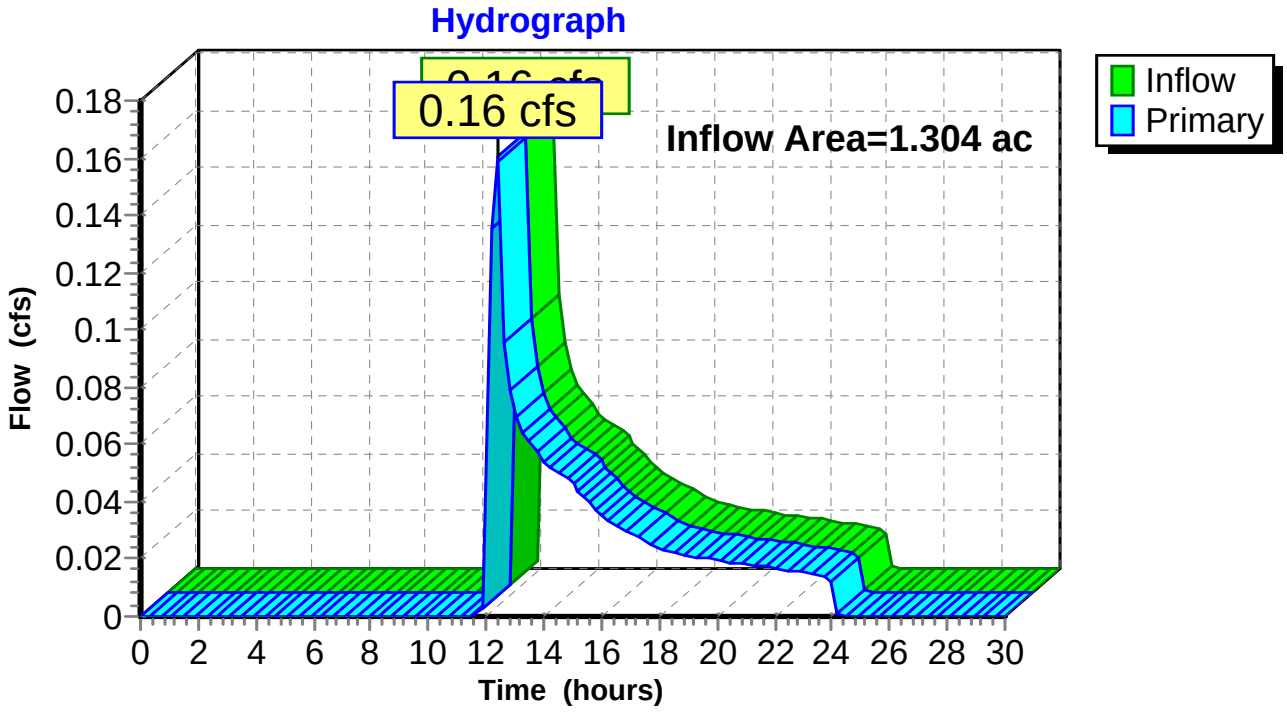


Summary for Link AP-5: AP-5

Inflow Area = 1.304 ac, 1.23% Impervious, Inflow Depth = 0.32" for 100-Year event
Inflow = 0.16 cfs @ 12.35 hrs, Volume= 0.035 af
Primary = 0.16 cfs @ 12.35 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-5: AP-5

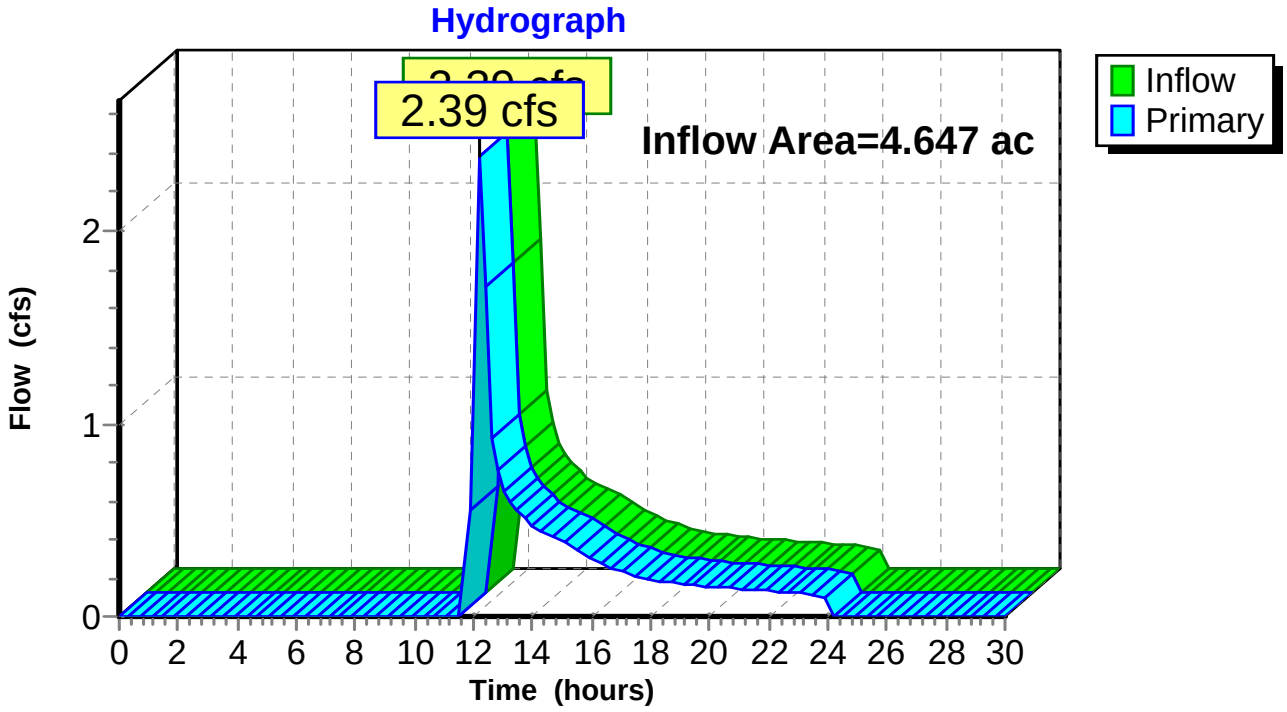


Summary for Link AP-6: AP-6

Inflow Area = 4.647 ac, 6.28% Impervious, Inflow Depth = 0.88" for 100-Year event
Inflow = 2.39 cfs @ 12.23 hrs, Volume= 0.340 af
Primary = 2.39 cfs @ 12.23 hrs, Volume= 0.340 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-6: AP-6

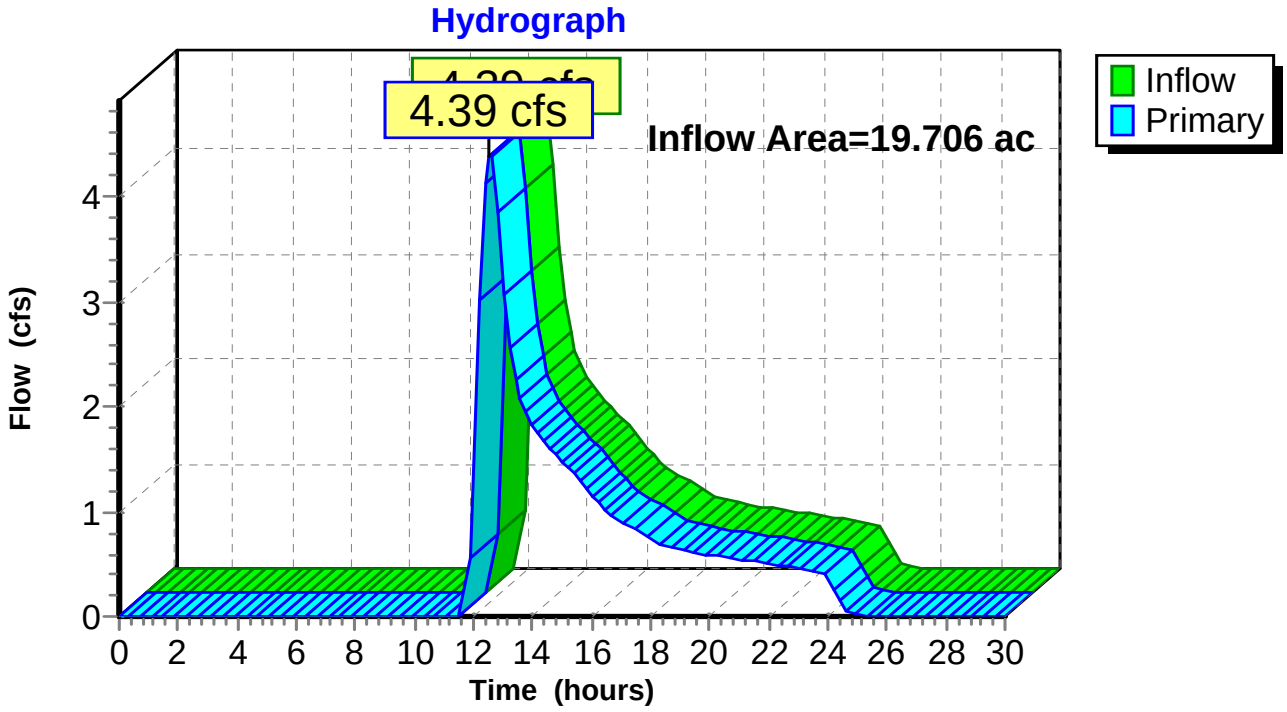


Summary for Link AP-FINAL: Quinnatisset Brook

Inflow Area = 19.706 ac, 1.56% Impervious, Inflow Depth = 0.71" for 100-Year event
Inflow = 4.39 cfs @ 12.56 hrs, Volume= 1.165 af
Primary = 4.39 cfs @ 12.56 hrs, Volume= 1.165 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Link AP-FINAL: Quinnatisset Brook



APPENDIX F

Water Quality Volume (WQV) Computations

Water Quality Calculations

Determine Water Quality Volume

From CT 2004 Stormwater Quality Manual:

$$WQV = \frac{(1")(R)(A)}{12}$$

WQV = water quality volume (ac-ft)
R = volumetric runoff coefficient
I = percent impervious cover
A = site area in acres

$$R = 0.05 + 0.009(I)$$

Area		Total Area		Impervious Area		Impervious Cover	Volumetric Runoff Coefficient	Required Water Quality Volume (WQv)		Available Water Quality Volume (WQv)
ID		ac	ft^2	ac	ft^2	%	R	acre-feet	ft^3	ft^3
PDA-1		5.570	242629	0.000	0	0.00	0.050	0.023	1,002	0
PDA-2		1.404	61158	0.000	0	0.00	0.050	0.006	261	0
PDA-3		3.793	165223	0.000	0	0.00	0.050	0.016	697	0
PDA-4		2.988	130157	0.000	0	0.00	0.050	0.012	523	0
PDA-5		1.306	56889	0.016	697	1.23	0.061	0.007	305	4,587
PDA-6		4.647	202423	0.292	12720	6.28	0.107	0.041	1,786	0
		0.000	0	0.000	0	0.00	0.000	0.000	0	0
		0.000	0	0.000	0	0.00	0.000	0.000	0	0
							Total:	0.048	4,574	4,587